Data-Informed Patient Blood Management Saves $1.2M

Community Health Network

💰 **>$1.2M** in cost savings.

PRODUCTS

➤ Health Catalyst® Data Operating System (DOS™)

EXECUTIVE SUMMARY

Blood products are in high demand but often low in inventory, creating the need for healthcare organizations to ensure effective patient blood management. Community Health Network (CHNw) wanted to improve the effectiveness of patient blood management but lacked the data and analytics to drive meaningful change. Gathering the necessary data took valuable time, and, when obtained, it often had quality issues that made it difficult to reconcile. The organization utilized its data platform and a robust suite of analytics applications to provide high-value data, analytics, and insights. CHNw's data-informed patient blood management has decreased unnecessary transfusions and improved the management of this costly, limited resource.

THE IMPORTANCE OF PATIENT BLOOD MANAGEMENT

Nearly 29,000 units of red blood cells (RBC) are needed every day in the U.S.[1] Blood transfusions are a vitally important therapy but remain one of the most overused procedures.[2] Blood products are often at critically low inventory levels, increasing the pressure for organizations to ensure effective patient blood management.

THE BURDEN OF IDENTIFYING IMPROVEMENT OPPORTUNITIES

CHNw sought to improve the effectiveness of patient blood management to ensure that costly, limited blood products were appropriately used for patients who could benefit the most from the therapy. Still, the organization lacked data and analytics, impeding improvement efforts.

Obtaining the data required to evaluate performance and identify improvement opportunities required substantial time and were burdensome. Data were spread across multiple sources, including the EHR, blood bank, and financial department. When CHNw finally obtained data from these sources, it often experienced data-quality issues. Data from different sources sometimes conflicted and were difficult to reconcile. CHNw needed a solution that would provide timely, actionable insights that could be used to better manage limited blood supplies and improve performance.

DATA FUELS EFFECTIVE BLOOD MANAGEMENT

CHNw chose to use the Health Catalyst® Data Operating System (DOS™) platform and a robust suite of analytics applications, including the Blood Utilization analytics accelerator and Healthcare.AI, to gain access to the high-value data and analytics, and actionable insights required to improve patient blood management effectiveness.

CHNw uses the Blood Utilization analytics accelerator and Healthcare.AI to see, understand, and improve patient blood management. Using the analytics accelerator, the organization can quickly and effectively visualize the:

- Number of transfusions ordered and given, including the reason for transfusion and clinical criteria.
- Percentage of blood transfused related to hemoglobin (Hgb) level.
- Total volume of transfusions by component.
- Total units transfused by 100 discharges, by specialty, by procedure, by ordering provider, and diagnosis.
- Quantification of savings opportunity over time.
- Transfusion reactions.
- Adherence to key transfusion-care best practices.

With the new insights gained from the analytics application, the organization targeted reducing the RBC utilization rate and ensuring adherence to transfusion best practices. It developed and implemented a standard blood product order set, including a restrictive transfusion strategy by Hgb level. CHNw also provided education and support for registered nurses and providers about using the order set and education about the most recent patient blood management best practices and communicated the expectation that providers enter blood orders using computerized provider order entry.

The new insights also supported the organization's decision for updated decision support in the EHR to ensure alerts appeared in the right workflow for the right provider. The alerts inform the ordering provider if there is no Hgb and prompt the provider to order and review the Hgb before ordering a transfusion. If the Hgb is greater than 7-8 g/dL, the alert encourages the provider to reconsider transfusion, indicating transfusion is not recommended in hemodynamically stable patients. The alert can be bypassed if an emergent/massive transfusion is required.

ABOUT COMMUNITY HEALTH NETWORK

Community Health Network is consistently ranked among the nation's most integrated healthcare systems, leading the way in providing care across the full continuum through hundreds of physicians, specialty and acute care hospitals, surgery centers, home care services, behavioral health services, and employer health services.

"

The Health Catalyst Blood Utilization analytics accelerator provides us the high-quality data and analytics required to truly understand our performance and drive improvements. We successfully reduced the number of red blood cells transfused annually, saving more than $1.2M.

M. Danielle Dillon, MHL, BSN, RN, CCRN-K, Blood Management Director, Quality & Safety, Community Health Network

Healthcare.AI integration provides one-button augmented intelligence within the Blood Utilization analytics accelerator, enabling CHNw to produce higher-quality, faster insights. CHNw trusts the high-value and high-quality data in the analytics application. Data are integrated from multiple source systems, integrated, and aggregated so CHNw can immediately identify and manage variations in practice and performance trends over time. Integrated statistical process control charts support CHNw quickly drawing more accurate and consistent conclusions about performance and improvement opportunities. The organization uses its rich, high-quality data and analytics to engage providers in continually improving patient blood management effectiveness.

RESULTS

CHNw's data-informed patient blood management has decreased unnecessary transfusions and improved the management of a costly, limited resource resulting in:

- ❯ **>$1.2M in cost savings**, the result of decreased utilization of blood products—1,500 RBCs avoided.
- ❯ **Hundreds of hours** in **manual data review avoided annually**, generating capacity to focus on performance improvement.

The analytics accelerator has also enabled CHNw to identify previously hidden improvement opportunities. For example, because of the high-quality data in the analytics accelerator, the organization was able to identify opportunities to decrease the waste of fresh frozen plasma.

WHAT'S NEXT

CHNw is continuing to improve the effectiveness of patient blood management. The organization is implementing new processes to improve preoperative anemia management for patients undergoing elective surgery. Additionally, CHNw is standardizing a provider champion-driven approach to conducting crucial conversations with providers who do not have clinical indications in ordering blood products and escalating trends via appropriate safety event reporting mechanisms. The organization is also optimizing massive transfusion protocol use and practice in conjunction with OR, maternity, and education leaders.

REFERENCES

1. American Red Cross. (n.d.). U.S. blood supply facts. Retrieved from https://www.redcrossblood.org/donate-blood/how-to-donate/how-blood-donations-help/blood-needs-blood-supply.html
2. Sadana, D., et al. (2018). Promoting high-value practice by reducing unnecessary transfusions with a patient blood management program. *JAMA Intern Med., 178*(1), 116–122. Retrieved from https://pubmed.ncbi.nlm.nih.gov/29159367/

ABOUT HEALTH CATALYST

Health Catalyst is a leading provider of data and analytics technology and services to healthcare organizations, committed to being the catalyst for massive, measurable, data-informed healthcare improvement. Our customers leverage our cloud-based data platform—powered by data from more than 100 million patient records, and encompassing trillions of facts—as well as our analytics software and professional services expertise to make data-informed decisions and realize measurable clinical, financial, and operational improvements. We envision a future in which all healthcare decisions are data informed.

Learn more at **www.healthcatalyst.com**, and follow us on **Twitter**, **LinkedIn**, and **Facebook**.