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Success Through Data: Blood utilization rates improve with the help of analytics

Background	Methods								Results			
While blood transfu considered safe, se shown that high tra increase the risk of cardiac surgery. Ac 40% of transfusions necessary, placing finances. One unit including testing an	Using a data driven approach, our physician led interdisciplinary task force reviewed blood utilization reports for cardiac surgery over a 6-month period. Utilization rates for each type of blood product were included and categorized by phase of surgery in which blood products were administered. Surgeons received an unblinded copy of all reports, including a							Within the 6-month period, blood utilization rates dropped from 37.8% to 27.7%. The cost per case for blood products went from \$573 to \$361 with an annual estimated savings of \$500,000. Quality outcomes such as, length of stay, mortality, renal failure and readmission rates remained unchanged.				
approximately \$1,100. These statistics have generated growing interest in hospitals across the country in finding ways to decrease the use of blood products while maintaining or improving quality.				and blood utilization rates by surgeon.							CY 2017ProcedureTotal # of casesTransfusions** TotalFreqTAM3010N/AIsolated CAB52527853.0%	
				Metric Postop Blood Product 10 % Post Op Transfusion Percent of isolated CABG patients who received blood transfusion post operatively.	ts	08/01/201	7 - 07/31/ Total Y 33.1% 26 (175/528) (77/	2018 TD Apr-1 3% 29.49 293) (10/34	18 May-18 3 21.6% 4) (11/51)	Jun-18 Jul- 22.4% 21.9 (11/49) (7/3	8	Other OH S 232 103 44.4% AVR 105 35 33.3% MVR 24 13 54.2% AVR/CABG 78 51 65.4% MVR./CABG 10 100.0% AVR/MVR 11 10 90.9% MVP 95 18 18.9%
Ministry - Selected Provider Type Name	Encounter Volume	Avg. Treatment	Avg. Blood Utilization Rate	11 Number of Blood Product Used 1 Red Blood Cell Unit (Postop) Percentage of isolated CABG transfusion petients who received one Red Blood Cell Unit postoperatively.	$\begin{array}{c} 100\\ 80\\ 0\\ 40\\ 20\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0$	10	33.1% 26. (56/175) (29	3% 29.49 (3/10)	% 21.6%) (5/11)	22.4% 21.9 (1/11) (47	16	CABG/MVP 12 7 58.3% LVA 2 2 100.0% Total 1395 527 37.8%
ININD John Doe, M.D. ININD Jane Doe, M.D. ININD John Doe Jr., M.D.	10.0 30.0 30.0	\$739 \$424 \$400	40.0% 30.0% 43.3%	12 Number of Blood Product Used 2 Red Blood Cell Units (Postop) Percentage of isolated CABG transfusion patients who received two Red Blood Cell Units postoperatively.	100 40 0 0 0 0 0 0 0 0	8.6	19.4% 24 (34/175) (19	. 7% 30.0 9 (77) (3/10)	% 27.3%) (3/11)	45.5% 28.6 (5/11) (27	6	CYTD 2018 Cost per Case for Blood Products
ININD Surgical Sally, M.D. ININD Kevin Heart, MD. Grand Total	19.0 61.0 150.0	\$301 \$279 \$365	15.8% 23.0% 28.7%	13 Number of Blood Product Used 3 Red Blood Cell Units (Postop) Percentage of isolated CABG transfusion patients who received three Red Blood Cell Units postoperatively.	100 80 60 40 20 0 50 0 50 5 5 5 5 5 5 5 5 5 5 5 5 5	3	9.1% 6. (16/175) (5/	5% 10.09 77) (1/10)	% 0.0%	0.0% 0.0 (0/11) (07		\$400 \$300 \$200 \$100 \$0 Jan Feb Mar April May June July
				14 Number of Blood Product Used 4+ Red Blood Cell Units (Postop) Percentage of Isolated CABG transfusion patients who received four or more Red Blood Cell Units postoperatively.	100 80 60 40 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4.9	8.6% 7./ (15/175) (5/	8% 10.09 77) (1/10)	% 9.1% 0 (1/1)	9.1% 0.0 (1/11) (97		Metric Target R12 Month Total YTD Apr-18 May-18 Jun-18 Jul-18 Intraop & Postop Blood Products 1 100<
				15 % Pts receiving Platelets (Postop) Percent of Isolated CABG transfusion patients who received Platelets post operatively.	$\begin{array}{c} 100 \\ 80 \\ 60 \\ 40 \\ 20 \\ 0 \\ 12 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	7.4%	24.0% 3 (42/175) (2.5% 50.0 5/10) (5/1	0% 27.3% 10) (3/11)	36.4% 23 (4/11)	.6% 1/7)	% Transfusion 80 40.0% 40.0% 31.4% 29.4% 22.4% 28.1% Percent of isolated CABG patients who received bload transfusion intra or post operatively. 00 Target 40.0% 140.0% 31.4% 29.4% 22.4% 28.1% 0 <td< td=""></td<>
				16 % Pts receiving FFP (Postop) Percent of isolated CABG transfusion patients who received Firesh Frozen Plasma post operatively.	100 80 60 40 20 0 D_{p}	6.4%	10.3% 10 (18/175) (1	6.9% 30.0 (3/77) (3/1	0% 9.1% 10) (1/11)	36.4% 0	0% 17)	Isolated CABG Outcomes Outcome CY2017 CY 2018 Q1-Q3 ALOS 7.2 days 7.0 days
				17 % Pts receiving Cryo (Postop) Percent of isolated CABG transfusion patients who received Cryoprecipitate post operatively.	100 80 60 40 20 0 10 10 10 10 10 10 10	3.3%	32.0% 3 (56/175) (2	8. 4% 60.0 8/77) (6/1	0% 18.2% 10) (2/11)	36.4% 29 (4/11) (.6% /7)	In Hospital Non-Risk Adjusted Mortality1.2%Renal Failure1.0%1.1%Readmissions5.7%5.2%



Robust data analytics can assist interdisciplinary surgical teams in lowering blood utilization and costs associated with transfusions while maintaining quality outcomes.

Improve blood utilization rates and reduce costs associated with transfusions through the use of robust data analytics and unblinded reporting.

Authors

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Disclosures

The primary author and co-authors have nothing to disclose.

Conclusion

Clinical Implications