Tiny Drops, Big Impact: Strategies for Pediatric Transfusion Efficiency

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Background

- Blood transfusions are essential in pediatric medical & surgical care.
- Appropriate transfusion indications must be considered.
- An interdisciplinary pediatric transfusion committee at a tertiary children's hospital reviews data to improve quality of patient care.
- The committee provided a data-sharing platform but lacked processes to analyze & identify improvement areas.

Purpose

- Aim: Quality improvement (QI) initiative to establish processes for evaluating packed red blood cell (PRBC) utilization & wastage.
- Goal: Improve pediatric transfusion practices.

Methods

- PDSA, multiple pediatric units
- March 2024: New data review processes implemented through the pediatric transfusion committee.
- PRBC Utilization: (1) Control charts to identify & investigate increased utilization, (2) review cases of PRBC transfusions outside of established hemoglobin parameters.
- Blood Wastage: 5 why's template to identify root causes.

Campus/Unit:	Date/Time of Wastage Event:	Wastage Components:	Wastage Reason:
Physician/APC:	**Service Line:**	**Patient's Weight:**	**Patient's Age:**
1. WHY?			
2. WHY?			
3. WHY?			
4. WHY?			
5. WHY?			
Root cause identified:			
OFIs identified:			
Action plan:			

Figure 1. 5 why's wastage event drill down

Outcomes

- March 2024 - March 2025
  - 250 PRBC utilization cases (0 to peer review), 3 spikes in pediatric PRBC utilization, 96 blood wastage events.
  - Opportunities identified by outcomes data: Blood returned out of temperature, cooler usage, targeted evaluation & process improvement in high-wastage patient populations (ex: cardiac), timely blood release/return, real-time wastage event reporting & review.

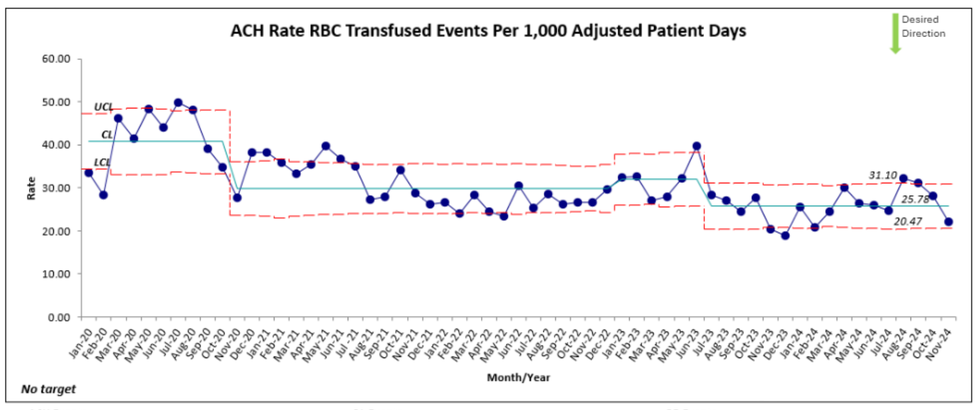

Figure 2. PRBC Utilization

ACH Unit Wastage Events - 2024													
2024	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
PICU PR	1								1				2
2T PR	1			1					2			1	5
NICU PR		1	1	4	6	2	1	1	3	3	1		23
SURG PR				1									1
2W PR		2							1				3
HEM-ONC PR						1							1
2C PR							1						1
PCICU	1		3	6	2					4	2	4	22
ED OL	1												1
SURG OL	5	1	6	5	1			1			3		22
NICU OL			3					4	1	1			9
CATH LAB OL			1										1
PICU OL					2	2				1			5
Monthly Total	9	4	14	17	11	5	2	6	8	9	6	5	96

Figure 3. Blood wastage events

Conclusions

- We established a standard process to evaluate utilization trends, increased usage, & transfusion appropriateness.
- Engaging an interdisciplinary team in wastage drilldowns uncovers root causes, improvement opportunities, & action plans.
- Challenges: Time, data platform transition, report discrepancies, duplicate review processes.

Implications for Practice

- Engaging pediatric transfusion committee members allows for improved data sharing & transparency.
- A formal data structure promotes appropriate, safe & efficient pediatric transfusions.

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