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Conference

Blood Product Transfusion Documentation Compliance Improvement Initiative

"The Red Card Project"

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JOHNS HOPKINS NURSING

Disclosure Statement

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All individuals involved in the planning and delivery of this activity have no relevant financial relationship(s) with ineligible companies.

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Introduction

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- Joint Commission along with the American Medical Association has included blood transfusions in a list of the five most overused therapeutic procedures in the United States, which poses potential adverse events that impacts patient safety (Rahav Koren et. al, 2019). In 2023 alone, JHH have transfused around 40,000 units of blood and blood components.

- Over the past two decades, the transfusion policies related to screening of donors, decision to transfuse, ABO compatibility, and crossmatch have expanded and have greatly reduced the risk of transmission of viral infections. However, implementation of transfusion-related documentation on bedside is scantly practiced and underreported, especially in the developing world (Fatima, N. et. al 2021)

Introduction

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- The growing burden caused by documentation requirements has led to inefficiencies in the EHR, taking time away from patient care activities and reducing joy in the profession (Strudwick, G et. al, 2022)

- Current JHH Blood and Blood Component Transfusion documentation requirements include VS prior to transfusion, VS 10-20 minutes after start of transfusion, VS 1 hour after completed transfusion, Date and Time for Start and Stop action, Dual signature verification and volume transfused (JHH policy PAT029, 2022)

Practice Problem

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- Poor compliance was evident across JHH in terms of VS 10-20 minutes after start of transfusion and VS 1 hour after stop, in calendar year 2022 and 2023 with lowest compliance rate recorded of 53%

- Significant decrease in documentation compliance in terms VS prior to start of transfusion, stop action and volume transfused was also observed from calendar year 2022 to 2023 with lowest compliance rate of 20%

Practice Problem

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Tableau data for Calendar Year 2022

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JHHS Blood Product Transfusions Dashboard

Blood Transfusions Summary by Service

Compliance Metrics Summaries by Administering Service

	VS 1 Hr Prior to Start	VS 10-20 mins After Start	VS 1 Hr After Stop	Dual Signature	Transfusion Start Action	Transfusion Stop Action	Volume Transfused
Total	90.4% (N:33598; D:37166)	63.2% (N:23503; D:37166)	79.7% (N:29615; D:37166)	99.8% (N:37100; D:37166)	99.8% (N:37105; D:37166)	93.3% (N:34670; D:37166)	90.0% (N:33459; D:37166)
Emergency	99.4% (N:851; D:856)	73.2% (N:627; D:856)	74.3% (N:636; D:856)	99.6% (N:853; D:856)	99.6% (N:853; D:856)	95.6% (N:818; D:856)	72.7% (N:622; D:856)
GYN/OB	95.9% (N:486; D:507)	75.7% (N:384; D:507)	85.6% (N:434; D:507)	99.6% (N:505; D:507)	99.6% (N:505; D:507)	94.5% (N:479; D:507)	92.1% (N:467; D:507)
Medicine	97.5% (N:3870; D:3969)	65.7% (N:2608; D:3969)	77.0% (N:3055; D:3969)	99.8% (N:3960; D:3969)	99.8% (N:3960; D:3969)	90.3% (N:3585; D:3969)	88.5% (N:3513; D:3969)
Neurosciences	99.1% (N:926; D:934)	79.9% (N:746; D:934)	84.3% (N:787; D:934)	100.0% (N:934; D:934)	100.0% (N:934; D:934)	95.8% (N:895; D:934)	92.4% (N:863; D:934)
Oncology	87.3% (N:14392; D:16495)	63.4% (N:10453; D:16495)	80.2% (N:13231; D:16495)	99.8% (N:16470; D:16495)	99.9% (N:16472; D:16495)	92.8% (N:15309; D:16495)	89.7% (N:14789; D:16495)
Pediatrics	88.2% (N:6551; D:7431)	55.4% (N:4114; D:7431)	79.5% (N:5910; D:7431)	99.8% (N:7418; D:7431)	99.8% (N:7419; D:7431)	95.5% (N:7099; D:7431)	92.1% (N:6847; D:7431)
Physical Med & Rehab	93.3% (N:14; D:15)	53.3% (N:8; D:15)	60.0% (N:9; D:15)	100.0% (N:15; D:15)	100.0% (N:15; D:15)	60.0% (N:9; D:15)	60.0% (N:9; D:15)
Psychiatry	100.0% (N:5; D:5)	60.0% (N:3; D:5)	60.0% (N:3; D:5)	100.0% (N:5; D:5)	100.0% (N:5; D:5)	60.0% (N:3; D:5)	20.0% (N:1; D:5)
Surgery	93.5% (N:6503; D:6954)	65.6% (N:4560; D:6954)	79.8% (N:5550; D:6954)	99.8% (N:6940; D:6954)	99.8% (N:6942; D:6954)	93.1% (N:6473; D:6954)	91.3% (N:6348; D:6954)

>= 95%
90% - 94.9%
< 90%

Practice Problem

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Tableau data for Calendar Year 2023

JOHNS HOPKINS MEDICINE

JHHS Blood Product Transfusions Dashboard

Blood Transfusions Summary by Service

Compliance Metrics Summaries by Administering Service

	VS 1 Hr Prior to Start	VS 10-20 mins After Start	VS 1 Hr After Stop	Dual Signature	Transfusion Start Action	Transfusion Stop Action	Volume Transfused
Total	90.0% (N:36243; D:40268)	71.0% (N:28588; D:40268)	82.1% (N:33066; D:40268)	99.8% (N:40198; D:40268)	99.9% (N:40209; D:40268)	92.8% (N:37355; D:40268)	89.5% (N:36046; D:40268)
Emergency	99.7% (N:1165; D:1168)	82.4% (N:962; D:1168)	85.4% (N:997; D:1168)	99.6% (N:1163; D:1168)	99.8% (N:1166; D:1168)	97.3% (N:1136; D:1168)	82.9% (N:968; D:1168)
GYN/OB	98.5% (N:453; D:460)	74.6% (N:343; D:460)	81.5% (N:375; D:460)	100.0% (N:460; D:460)	100.0% (N:460; D:460)	87.8% (N:404; D:460)	87.4% (N:402; D:460)
Laboratory	81.0% (N:17; D:21)	71.4% (N:15; D:21)	95.2% (N:20; D:21)	100.0% (N:21; D:21)	100.0% (N:21; D:21)	100.0% (N:21; D:21)	81.0% (N:17; D:21)
Medicine	97.4% (N:4681; D:4806)	79.3% (N:3811; D:4806)	82.5% (N:3964; D:4806)	99.7% (N:4792; D:4806)	99.7% (N:4793; D:4806)	89.0% (N:4278; D:4806)	88.4% (N:4249; D:4806)
Neurosciences	99.3% (N:983; D:990)	85.9% (N:850; D:990)	89.9% (N:890; D:990)	99.8% (N:988; D:990)	99.8% (N:988; D:990)	95.5% (N:945; D:990)	93.4% (N:925; D:990)
Oncology	86.4% (N:15552; D:18005)	68.0% (N:12237; D:18005)	79.8% (N:14360; D:18005)	99.9% (N:17989; D:18005)	99.9% (N:17993; D:18005)	91.6% (N:16488; D:18005)	86.3% (N:15543; D:18005)
Outpatient	80.0% (N:4; D:5)	80.0% (N:4; D:5)	60.0% (N:3; D:5)	100.0% (N:5; D:5)	100.0% (N:5; D:5)	80.0% (N:4; D:5)	80.0% (N:4; D:5)
Pediatrics	86.8% (N:6877; D:7925)	63.5% (N:5035; D:7925)	82.6% (N:6544; D:7925)	99.8% (N:7912; D:7925)	99.8% (N:7913; D:7925)	95.9% (N:7602; D:7925)	94.5% (N:7492; D:7925)
Physical Med & Rehab	100.0% (N:16; D:16)	68.8% (N:11; D:16)	75.0% (N:12; D:16)	100.0% (N:16; D:16)	100.0% (N:16; D:16)	75.0% (N:12; D:16)	75.0% (N:12; D:16)
Psychiatry	100.0% (N:7; D:7)	85.7% (N:6; D:7)	85.7% (N:6; D:7)	100.0% (N:7; D:7)	100.0% (N:7; D:7)	100.0% (N:7; D:7)	100.0% (N:7; D:7)
Surgery	94.5% (N:6488; D:6865)	77.4% (N:5314; D:6865)	85.9% (N:5895; D:6865)	99.7% (N:6845; D:6865)	99.7% (N:6847; D:6865)	94.1% (N:6458; D:6865)	93.6% (N:6427; D:6865)

>= 95%
90% - 94.9%
< 90%

Quality Improvement Project Goal

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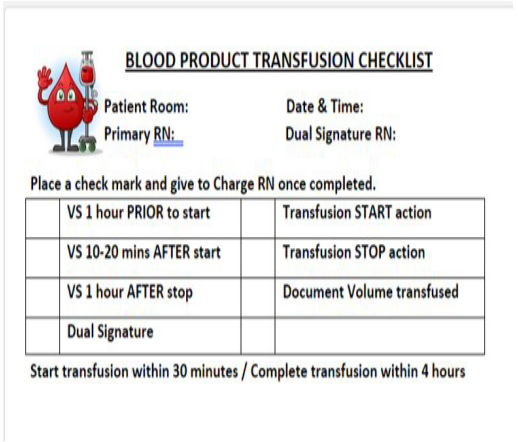
QI project was implemented in a 23 bed adult inpatient unit with hybrid IMC and Acute care settings

- To achieve at least 90% compliance rate across the board by the last two quarters of Calendar Year 2023 and first quarter of Calendar Year 2024

- To identify documentation gaps that led to poor compliance and communicate it to staff

Intervention

- Creation of Blood Transfusion Checklist or Red Card
- Strategic placement of Red Card Holders near pneumatic tube station where most of blood products are delivered
- CCSR to give Red Card to Primary RN when blood product arrives. Charge nurses to collect completed Red Cards for auditing purposes. Kept in charge RN binder



BLOOD PRODUCT TRANSFUSION CHECKLIST

Patient Room: Date & Time:
Primary RN: Dual Signature RN:

Place a check mark and give to Charge RN once completed.

	VS 1 hour PRIOR to start		Transfusion START action
	VS 10-20 mins AFTER start		Transfusion STOP action
	VS 1 hour AFTER stop		Document Volume transfused
	Dual Signature		

Start transfusion within 30 minutes / Complete transfusion within 4 hours

Intervention

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- Retrospective EHR documentation analysis using both completed Red Cards and generated Tableau data
- Pre Implementation Plan - Staff education on standards of blood transfusion, communicating QI project details including process for use of Red Cards. Trial period of 2 weeks before collection of data.
- Post Implementation Plan – monthly communication of findings through various platforms (email, huddle, staff meeting, bulletin boards). Providing constructive feedback for poor compliance, correcting documentation gap if still permissible, and recognizing staff with consistently high compliance

Auditing Plan

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- Daily reminders to staff highlighted on change of shift huddle. 1st month was focused on ensuring staff compliance with use of Red Card.
- 2nd to 4th month post implementation: Weekly audit on use of Red Cards and start Retrospective review of EHR documentation.
- 5th to 6th month post implementation: Biweekly Red Card compliance audit and EHR documentation retrospective review
- 7th month and beyond: Monthly Red Card Compliance audit and EHR documentation retrospective review

** Feedback given real time whenever possible to allow rectification of identified documentation gap. Findings shared monthly on staff meeting.

Recognizing Staff

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- Applause points, 1 day parking voucher, Dome passes, and bulletin board shout outs were amongst the ways consistency was celebrated with staff who consistently adhere to transfusion documentation requirements both as primary RN and dual signature RN.

- Establish a culture of shared accountability with the dual signature RN is as crucial as giving feedback and/or recognition to Primary RN

Data Collection

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- All data related to QI project is stored in a password encrypted document under One Drive folder with restricted access
- Completed Red Cards collected from Charge RN binder and kept in secured container after audit
- Pre Implementation plan initiated June 12, 2023
- Data collection started July 1, 2023.
- Generate tableau data
  - To determine rate of transfusion documentation compliance in relation to use of Red Cards
  - To perform retrospective EHR documentation review and analysis to identify gaps using transfusion details from tableau

Results

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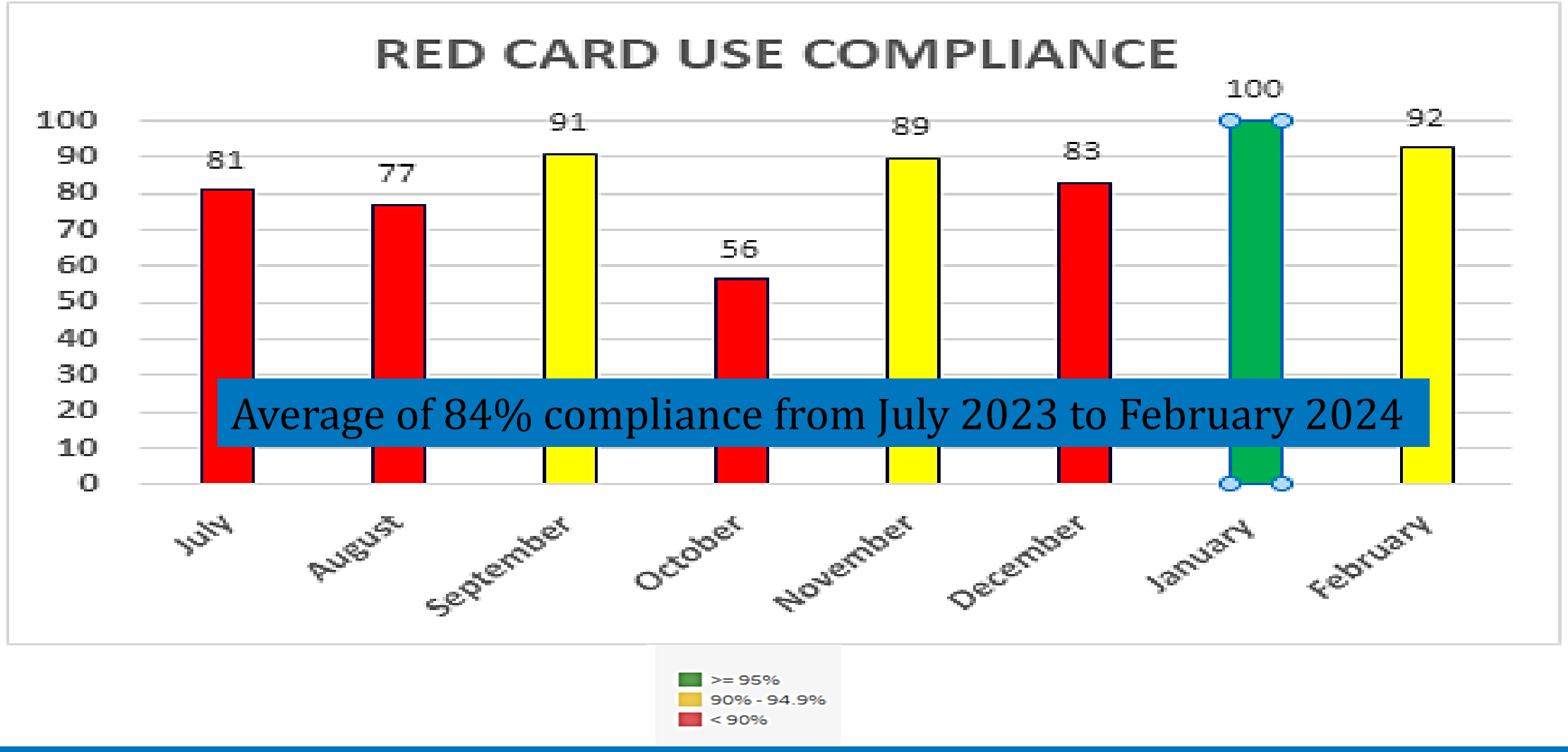

Results

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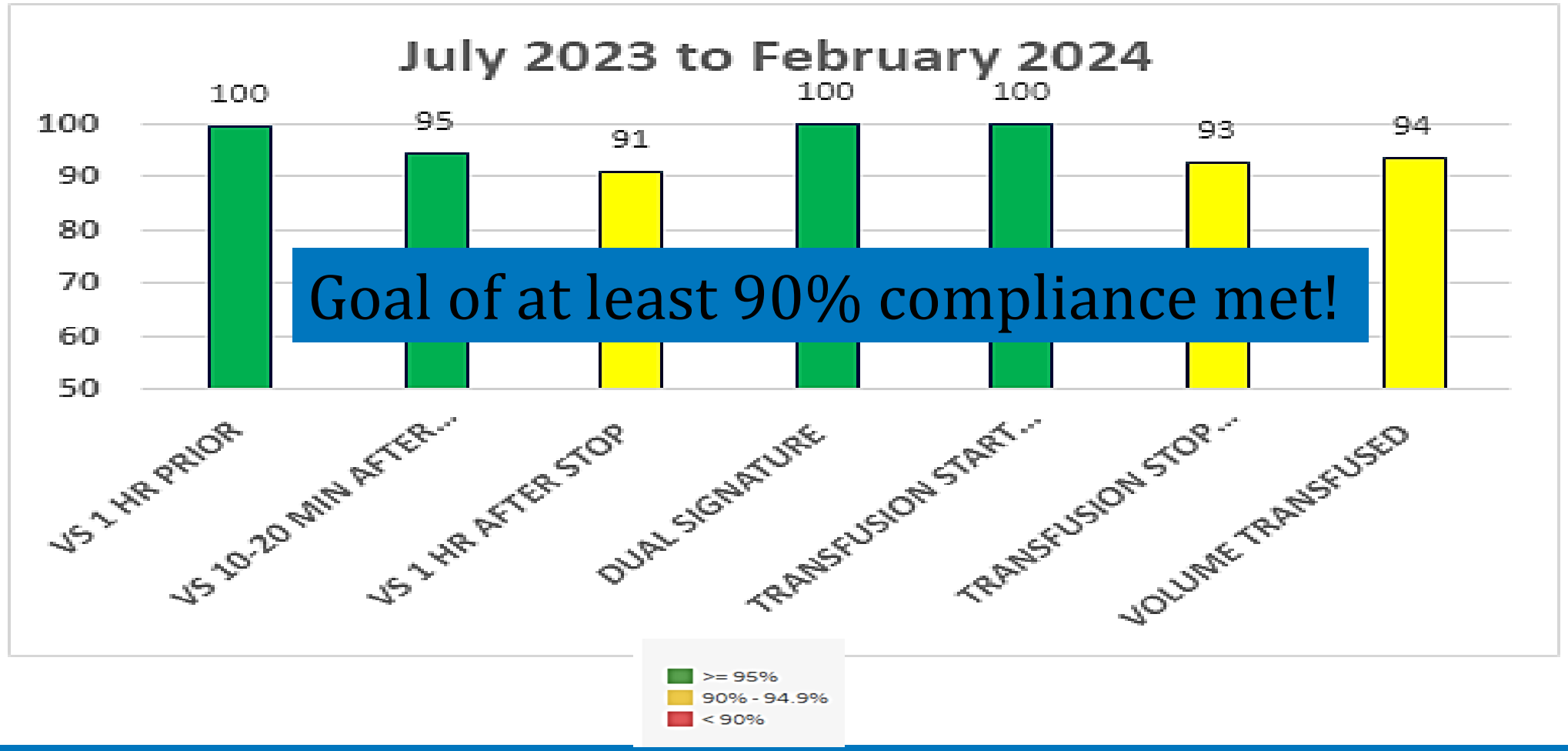
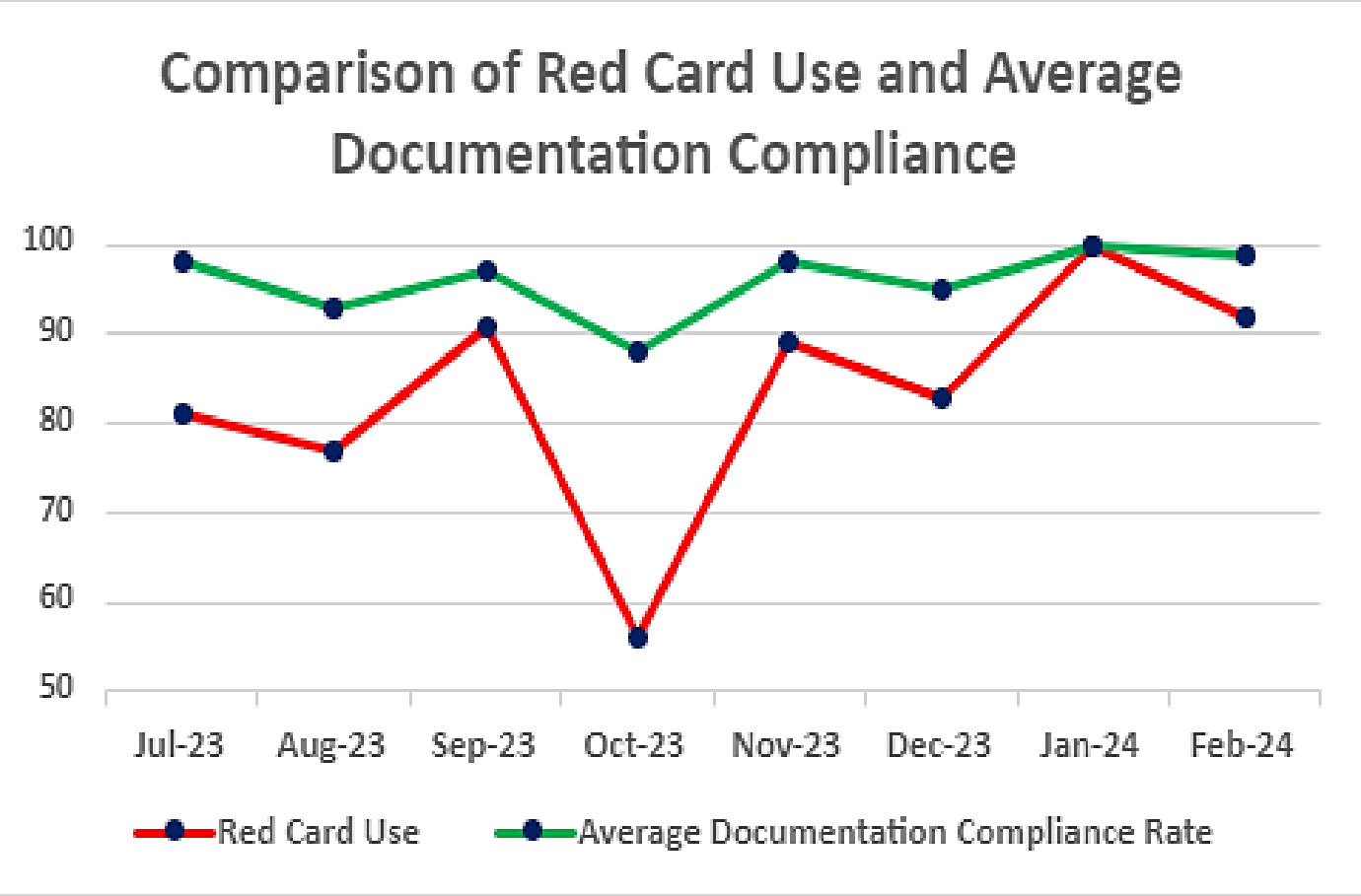
Post Implementation Blood Product Transfusion Documentation Compliance Rate



Goal of at least 90% compliance met!

Results



Documentation Compliance improves when Red Cards are use by Primary RN when transfusing blood products.

Results

Monthly Blood Product Transfusion Documentation Compliance Rate

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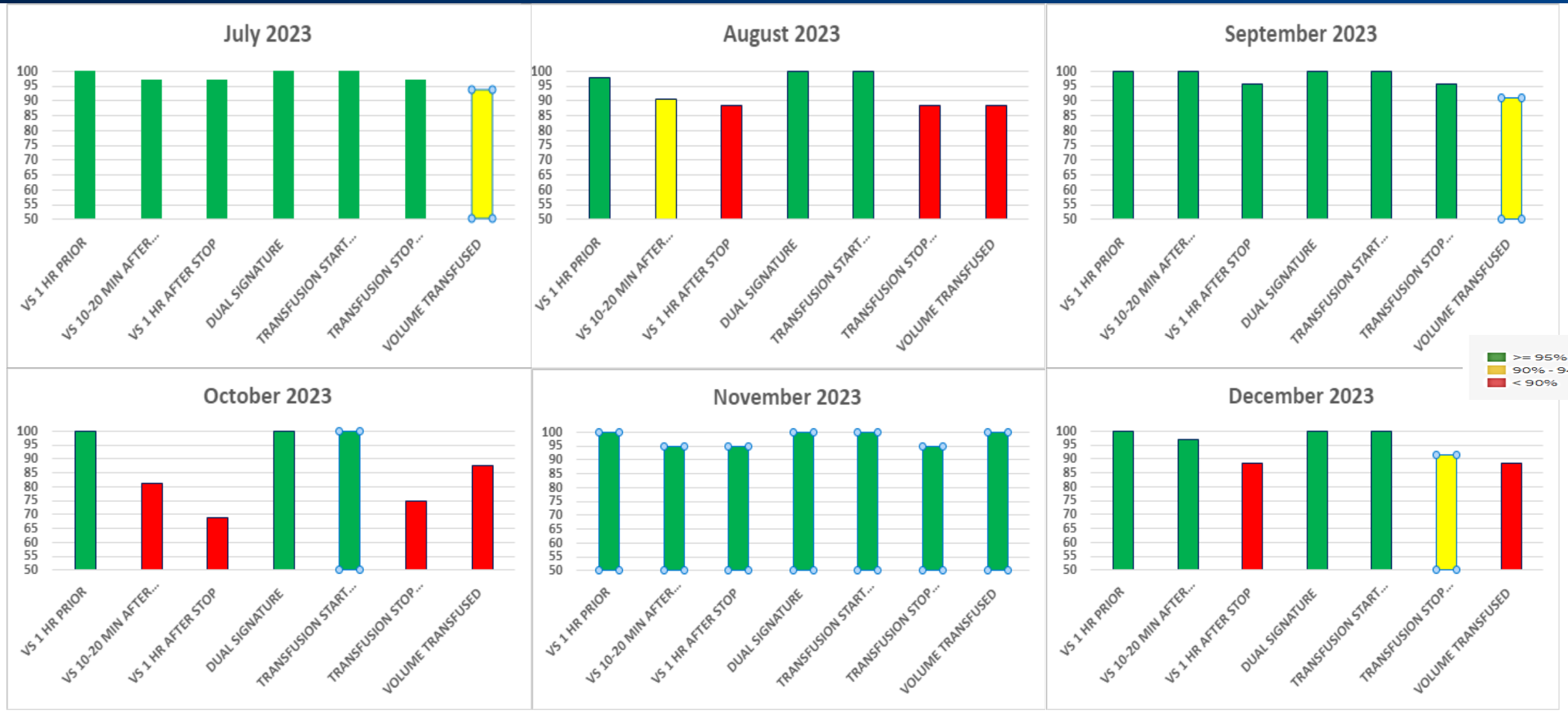

Results – Retrospective EHR Review

What is causing non compliance despite use of Red Card?

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- Non compliance related to time difference between EHR start time and actual transfusion start time

Actual transfusion start time

EHR transfusion start time

	0950	0952	1136
Vita			
Temp	38 (100.4)		38 (100.4)	37.3 (99.2)
Temp src	Oral		Oral	Oral
Heart Rate	114		111	100
Resp	18		18	18
BP	109/55		101/52	112/59
MAP (mmHg)	79		75	82
Art Line (1)				
Arterial Line 1 BP				
Arterial Line 1 MAP				
Transfuse RBC				
Status: Completed 03/04/24 1157 -- Unit: W1864 24 000803 L-E0336V00			
Action		New Bag/Given		Stopped
Rate		75		0
Volume				315
Blood Admin Supplies				

Results – Retrospective EHR Review

What is causing non compliance despite use of Red Card?

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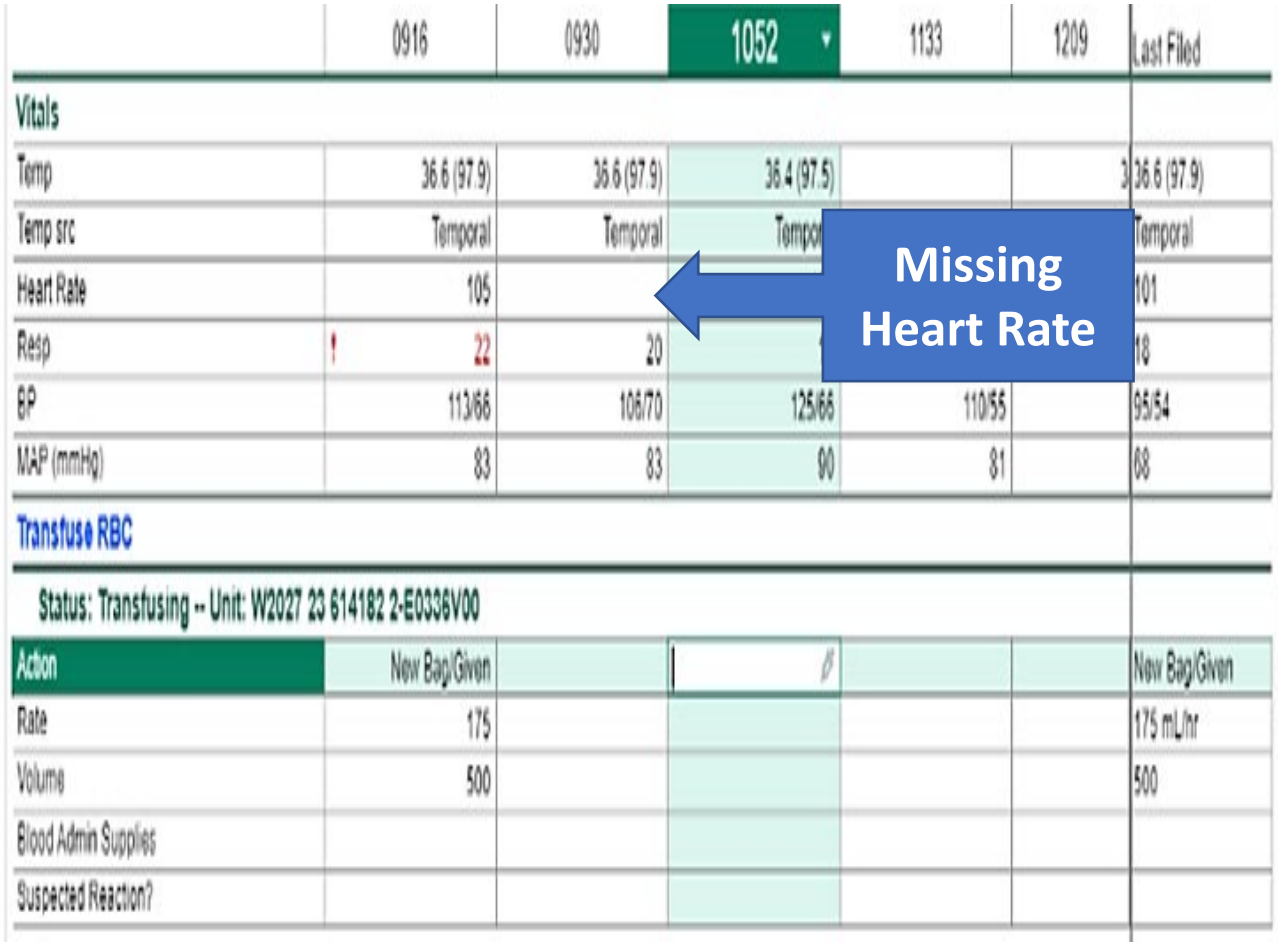
- Non compliance related to Incomplete/Missing Vital Signs parameters



	0916	0930	1052	1133	1209	Last Filed
Vitals						
Temp	36.6 (97.9)	36.6 (97.9)	36.4 (97.5)			36.6 (97.9)
Temp src	Temporal	Temporal	Tempo			Temporal
Heart Rate	105					101
Resp	! 22	20				18
BP	113/66	106/70	125/66	110/55		95/54
MAP (mmHg)	83	83	90	81		68
Transfuse RBC						
Status: Transfusing -- Unit: W2027 23 614182 2-E0336V00						
Action	New Bag/Given					New Bag/Given
Rate	175					175 mL/hr
Volume	500					500
Blood Admin Supplies						
Suspected Reaction?						

Missing Heart Rate

Results – Retrospective EHR Review

What is causing non compliance despite use of Red Card?

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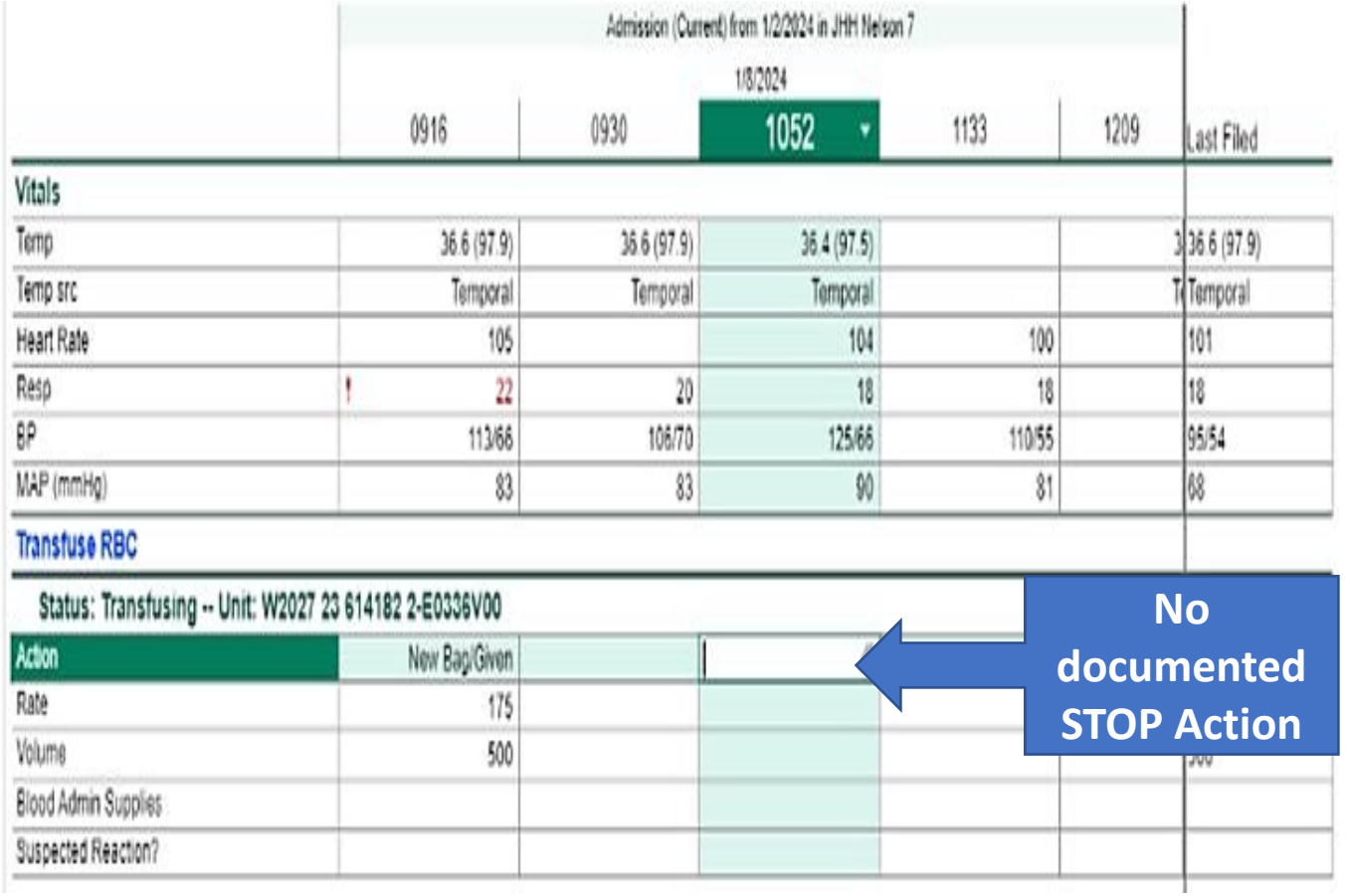
- Failure to document STOP action also results to non compliance in VS 1hr after transfusion stop



Admission (Current) from 1/2/2024 in JHH Nelson 7

	1/8/2024 0916	0930	1052	1133	1209	Last Filed
Vitals						
Temp	36.6 (97.9)	36.6 (97.9)	36.4 (97.5)			36.6 (97.9)
Temp src	Temporal	Temporal	Temporal			Temporal
Heart Rate	105		104	100		101
Resp	! 22	20	18	18		18
BP	113/66	106/70	125/66	110/55		95/54
MAP (mmHg)	83	83	90	81		68
Transfuse RBC						
Status: Transfusing -- Unit: W2027 23 614182 2-E0336V00						
Action	New Bag/Given					
Rate	175					
Volume	500					
Blood Admin Supplies						
Suspected Reaction?						

No documented STOP Action

Results – Retrospective EHR Review

What is causing non compliance despite use of Red Card?

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- Not documenting volume or documenting zero in volume transfused

Search (Alt+Comma)	1147	1200	1215	1229
Vitals				
Temp				37.4 (99.3)
Temp src				
Heart Rate	! 124	! 123		118
Resp				! 22
BP				
MAP (mmHg)				
Transfuse Platelets				
Status: Completed 03/03/24 1224 -- Unit: W1853 24 804238 8-E8342V00				
Action			Stopped	
Rate			0	
Volume			0	
Blood Admin Supplies				
Suspected Reaction?				

Documented ZERO on volume

Results – Retrospective EHR Review

What is causing non compliance despite use of Red Card?

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- Data collection loophole & difference in workflow!

Hemiparesis/RBC Exchange performed by at bedside where multiple units of blood are administered every 10-15 minutes. Attributed to unit where the treatment encounter happened.

	0820	0840	0856	0858	Last Filed
Vitals					
Temp	36.2 (97.2)		36.4 (97.5)		36.2 (97.2)
Temp src	Temporal		Temporal		Temporal
Heart Rate	88		87		92
Resp	18		20		18
BP	115/65		96/53		157/85
MAP (mmHg)			68		112
Art Line (1)					
Arterial Line 1 BP					168/79
Arterial Line 1 MAP					114 mmHg
Transfuse Leukoreduced RBC					
Status: Completed 03/05/24 0902 -- Unit: W1853 24 006859 N-E0336V00					
Action	New Bag/Given	Apheresis - Start - Sin...			Stopped
Rate	0	999			0 mL/hr
Volume					261
Blood Admin Supplies					
Suspected Reaction?					
Transfuse Leukoreduced RBC					
Status: Completed 03/05/24 0918 -- Unit: W1853 24 010028 H-E0336V00					
Action	New Bag/Given			Apheresis - Star	Stopped
Rate	0				0 mL/hr
Volume					236
Blood Admin Supplies					
Suspected Reaction?					

Results

2024 Blood Product Transfusion Documentation Compliance Rate

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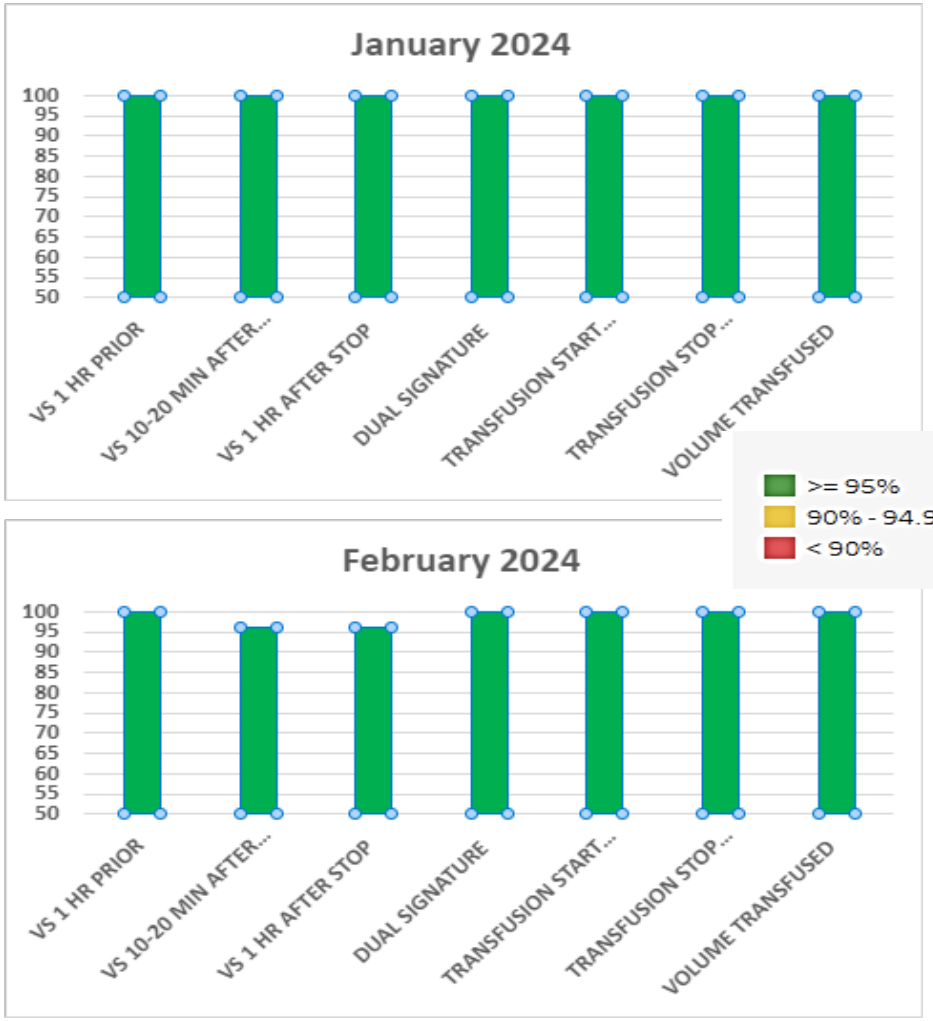
- After Retrospective EHR documentation review, identified documentation gaps were communicated to staff that have resulted to further improvement of compliance rate in 2024.
- After 6 months of implementation, it is evident that the use of Red Card have been engraved in the unit blood transfusions best practices which translated to even better documentation outcomes.



Summary of Outcomes

- Use of Blood Product Transfusion checklist or Red Card have improved EHR documentation outcomes translating to high compliance rate that meets the Joint Commission standards

- Non Compliance are related to
  - (1) Time difference between EHR start time and actual transfusion start time
  - (2) Incomplete/Missing Vital Signs parameter(s)
  - (3) Failure to document STOP action that also results to non compliance in VS 1hr after transfusion stop
  - (4) Not documenting volume or documenting zero in volume transfused
  - (5) Data collection loophole

Questions?

References

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