Carter BloodCare

Hospital Forum Minutes
"*Dog Days of Summer*"
July 20, 2018

Attendees:

Guests: Ryan Phillips, Methodist Charlton Medical Center; Krista Roberts, Texas Health Arlington Memorial Hospital; Tanya Robohm, Texas Health Dallas; Huy Phan, Texas Health Dallas; Patti Calcote, UT Health Tyler; Ashley Flores, Cook Children's Medical Center; Rick Melman, BSW All Saints Medical Center; Suzanne Moore, Medical City Dallas; Monica Phillips-Bryant, Goodall-Witcher Medical Center; Julia Blackburn, Texas Health HEB; Jessica Gandy, Texas Health Southwest; Chanel Sokol, Christus Mother Frances – Sulphur Springs; Brian Gibson Methodist Hospital Southlake; David Hanna, Texas Health Presbyterian Rockwall; Carol Kelly, Lake Granbury Medical Center; Pat Williams, Baylor University Medical Center; Janelle Theibaud, Texas Health Harris Methodist Stephenville; Julia Maxwell, Methodist Dallas Medical Center; Jessica Gemmell, Dallas Regional Medical Center; Caitlin Miller, The Heart Hospital Baylor Plano; Clinnis Adams, Texas Health Presbyterian Rockwall; Callie Carson, Lake Granbury Medical Center; Simeonette Ballesteros, Methodist Dallas Medical Center; Kathy Price, Hunt ER Commerce; Mary Sue Devorss, Hunt Regional Medical Center

Carter BloodCare: Dr. Merlyn Sayers, Stephen Eason, Lavetta Kennedy, Pam Boyd, Dorothy Blake, Nelson Eke, Judy Thornburg, Andrea Sign, Dr. Todd Nishimoto, Sandy Wortman, Josey Keep, Marla Boren, B.J. Smith, Dr. Laurie Sutor, Dr. William Crews, Dr. Geeta Paranjape, Macie Skinner, Jillian Schultz, Suhan Samarasuriya

Hereditary Hemochromatosis and Testosterone donors, James Giacoletti, Medical Services, Carter BloodCare
Special Donations, Welda Alaman, Manager of Special Donations and Donor Advocate, Carter BloodCare

- ✓ Presentation handouts attached, review for comprehensive information shared.
  - Attendee Questions/Comments
    - Q1. Are women enrolled in the HH and testosterone programs?

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        - Yes, women are enrolled in both programs.
    - Q2: Can true therapeutic patients donate at any donor center location?
        - Yes. Previously these patients could only donate at select donor centers; however, as of June 2018, they can donate at any of our neighborhood donor centers.

Using LMS (Lean Management System) to Develop Competent, Confident, and Contented Staff, Patricia L. Williams, BS, MT(ASCP)SBB, Manager Transfusion Service, Baylor University Medical Center – Dallas

- ✓ Presentation handouts attached, review for comprehensive information shared.
    - Attendee Questions/Comments
        - Q1: Does the blood bank have the authority to prevent a unit from being dispensed if the transfusion request does not fall within the established transfusion criteria?
            - No, the blood bank staff does not prevent the release of a unit; they do however, investigate any "unusual" requests and request MD consult if appropriate. "
        - Q2: How long do you hold the crossmatched units from surgery prior to release?
            - The crossmatched units for that day's surgery are stored in the surgery refrigerator. Those units are retrieved every evening around 2130 and released then. This is approximately 85 units.
        - Q3: If you did not have the electronic crossmatch capability, do you think you could have made the change to release the crossmatched units intended for surgery?
            - Probably not without Medical Executive Committee approval.
        - Can you please share a picture of your huddle board?
            - Yes. Will share the picture as it received.

Managing the Platelet Inventory, Veronica Moore, Director of Hospital Relations, Carter BloodCare

- ✓ Presentation handouts attached, review for comprehensive information shared
    - Attendee Questions/Comments
        - Q1: Will the platelets be picked up prior to expiration on Day 5?
            - Yes, in order for Carter BloodCare to manipulate the component and extend the shelf life, the unit must be in-date.

7 Day Platelets Using the Verax Platelet PGD Test, **Rick Thornburg, Hematology Manager, Carter BloodCare**

- ✓ Presentation handouts attached, review for comprehensive information shared.

Rare Unit Inventory, Dorothy Blake, Reference and Transfusion Laboratory, Carter BloodCare

- ✓ Presentation handouts attached, review for comprehensive information shared.
  - Attendee Questions/ Comments
    - What is Carter BloodCare doing to actively recruit African American donors?
      - A letter is mailed to R_0 donors explaining their importance to the sickle cell population
      - Blood drives scheduled during Sickle Cell Month to help educate and promote the need

A most sincere thank you to the presenters – this program exists because of your generosity to share your knowledge and experiences with the group.

And of course, thank you to all the attendees!

Hospital Forum Luncheon

Agenda

Topics:

- **Therapeutic Donation Updates**
  James Giacoletti, Assistant Manager of Donor Notification, Carter BloodCare and Welda Alaman, Manager of Donor Advocate & Special Donations, Carter BloodCare
- **Using LMS (Lean Management System) to Develop Competent, Confident, and Contented Staff,** Patricia L. Williams, BS, MT(ASCP)SBB, Manager Transfusion Service, Baylor University Medical Center – Dallas
- **7 Day Platelets Using the Platelet PGD Test**
  Rick Thornburg, Manager of Hematology, Carter BloodCare
- **Rare Unit Inventory**, Dorothy Blake, Reference and Transfusion Laboratory, Carter BloodCare

Open Discussion:

- **Blood Bank Refresher – Friday, September 21, 2018**
- **SBB rotation/observation**
- **New shipping containers**
- **Updated Reference and Transfusion request forms**
- **iWeBB orders and confirmation calls**
- **Zika update**

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Special Donations

Department Presentation
Welda R. Alaman
2018

Special Donations

Autologous Donations:

A process where the patient gives blood for their own surgery. If the blood is **not** used/needed for the surgery the unit is discarded and **CAN NOT** be crossed over into general inventory.

Required Paperwork:	Fee(s):	Scheduled Appointment(s):
• Autologous Blood Donation Request	$389.00	Scheduled by Special Donations at select Donor Centers

Annual Autologous Donations:

2016: 56 Autologous Donations

2017: 19 Autologous Donations

2018: 3 Autologous Donations

Decrease in Autologous donations means more Physician's and patients are relying on the general inventory in case any blood is need for surgery.

Special Donations

Directed Donations:

A process of giving blood for a specific patient/recipient. The blood donors have to be chosen by the patient/recipient as acceptable donors to donate. If the blood is **not** used/needed for the surgery the unit can crossed over into general inventory.

Required Paperwork:	Fee(s):	Scheduled Appointment(s):
• Request for Directed Donation &	$110.00	Scheduled by Special Donations at select Donor Centers
• Acceptable Directed Donors List		

Annual Directed Donations:

2016: 72 Directed Donations

2017: 51 Directed Donations

2018: 32 Directed Donations

Special Donations

Therapeutic Donations (True Therapeutic):

Therapeutic donation is a type of procedure provided as a treatment for medical conditions or blood disorders. These donors are currently **not** diagnosed with Hereditary Hemochromatosis (HH) and they are **not** taking Testosterone (LoT) but may have elevated red blood cells.

Required Paperwork:	Fee(s):	Scheduled Appointment(s):
• Therapeutic Donor Request	$90.00	Scheduled by Special Donations

Annual Therapeutic Donations:

2016: **175 Therapeutic Donations**

2017: **195 Therapeutic Donations**

2018: **101 Therapeutic Donations**

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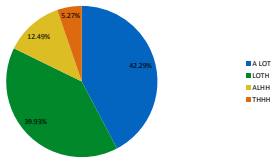
Special Donations

Therapeutic Donors (HH and LoT) Enrolled by Donor Notification:



Therapeutic Donors Scheduled by Special Donations:

	ALOT	LOTH	ALHH	THHH	TRUE THERAPEUTIC
2017:	1,190	1,470	545	258	195
2018:	1,628	1,905	546	225	103

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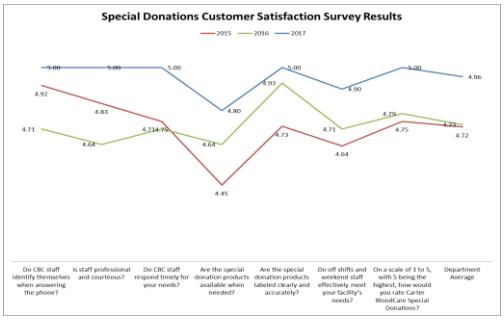
Special Donations



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Thank You!
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Using Lean Management System (LMS) to Develop Competent, Confident, and Contented Staff

Presented to Carter BloodCare Forum
July 20, 2018

Baylor University Medical Center
P. Williams, BS, MT(ASCP)SBB
Patricia.Williams@BSWHealth.org

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Lean Management System

- From the Toyota Production System (TPS)
- BSWH management method of choice
- Emphasis on "huddles" as a primary method.
- Measurement, analysis, suggestions, reporting.

✓End result – Empowering the frontline staff to help improve the operation.

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Toyota (Originally Toyoda)

- *Sakichi Toyoda, Founder of Toyoda Loom Works, 1926

"Everyone should tackle some great project at least once in their life. I devoted most of my life to inventing new kinds of looms. Now it is your turn. You should make an effort to complete something that will benefit society."

*Inventor and entrepreneur who perfected Japan's first power-driven loom in 1897. During the next three decades Toyoda went on to acquire 84 patents while developing 35 loom models.

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2

Toyota

Taiichi Ohno, Founder of TPS, 1940s-1970s

"All we are doing is looking at the time line from the moment the customer gives us an order to the point when we collect the cash. And we reducing the time line by removing the non-value-added wastes."

Transfusion Service Experience

- Create a "huddle" board.
- What was the rationale behind a "huddle" board?
- Through training, learned about LMS.
- "Huddle" board is a window into the LMS activities of the section.

Questions?

- What to improve?
- How to improve?
- What to measure – daily, weekly?
- Scoring system for huddle boards
- Focus on suggestions.
- Reduce waste
- Solve problems

Turnover

- Multiple reasons.
- Began hiring and training in our traditional way, lengthy checklists and training guides/questions.
- Observed outcome: Staff moved into assigned shift, but did not have confidence. Overwhelmed. Having to back fill with experienced to cover safely.
- Conclusion: Traditional training was not succeeding.

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New Training Plan

- Move to six week "basic" training model.
- Teach new MLS type and screen + crossmatch.
- Perform as many as possible, learning about special situations as encountered.
- 1 new morning task and 1 new afternoon task each day.
  - Receiving blood into inventory.
  - Introduction to antibody identification
- Completely "trained" takes 9 months.

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Outcome

- Confidence increased.
- More "cheerful" employee.
- Happier co-workers.
- New employee is contributing to the workload sooner.
- Hopefully, better retention.
- Some gaps noticed; tweaking was necessary.

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Patient Blood Management

- Give 1 and Reassess – Why Give 2 When 1 Will Do? Increase appropriateness of red cell transfusions
- Count daily "give" orders. How many are for 1 and how many for 2? Record total and % of 1 unit orders.
- "Huddle" board measure.
- Show daily and monthly counts.
- Also leading indicator for blood usage.

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Stopped "holding" red cells for 3 days post-op

- Huge improvement.
- Suddenly, we had too many red cells.
- Able to reduce blood supplier standing orders.
- Key, CMO told us we did not have to get the physicians'' approval for the change.
  - "Just do it."
- Received a BSWH system "huddle board" award. Highlighted to all facilities.

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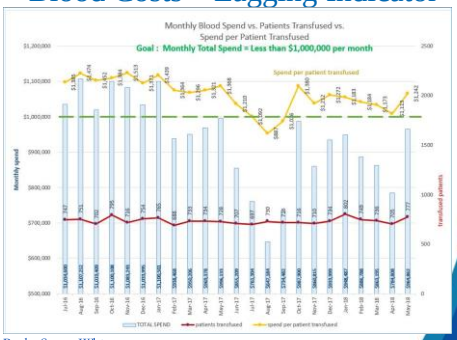
Blood Costs – Lagging Indicator



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12

Numerous Other Lean Improvements Some BIG, some little

- Change some paper forms to be front/back.
- Eliminate use of plastic holders for red cells.
- Start 2nd MTP as soon as 1st MTP is ordered.
- Tape downtime printer instructions to printer.
- Create a visible, fun staff birthday list.
- Play "The Price is Right" cost guess game during Lab Week.

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Recognition

- Within the service.
- External to the service.
- Self-promote to senior leadership.
- COO told his leadership team:
  - Blood bank had the "most improved" huddle board.
  - Blood bank modeled the LMS.
  - Leadership held up as a good example for applying LMS to operational improvement.

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Results

- Lean thinking is ingrained in the day-to-day.
- Many benefits, including simplifying daily work.
- Helps to reduce stress.
- More laughter and smiles.
- Hopefully helps retention.
- Hopefully reduces errors.

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No Fee Phlebotomy Programs

Hereditary Hemochromatosis and Testosterone donors

James Giacoletti
Donor Notification – Medical Services

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Hereditary Hemochromatosis

Program began in 2009 with approved FDA variance

For donors Dx with HH

Other types of hemochromatosis are considered true TH

Requires physician's acknowledgement of HH dx and form requesting frequency and Hct level

Requires donor's acknowledgement that draws are preformed free of charge regardless of eligibility status

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Enrollment takes between 1 to 3 days

Testosterone Therapy

Program began in 2014 with approved FDA variance

Donor must be actively receiving testosterone therapy-- in any form

Requires physician's order requesting frequency

Donor provides verbal acknowledgement that draws are preformed free of charge regardless of eligibility status

Enrollment takes between 1 to 3 days

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No Fee Phlebotomy Programs

Whole Blood (Red Cell) donation only

May donate more frequently than every 56 days

- **Average frequency between every 2 weeks to monthly**

Enrollment is for life

- **but order must be updated yearly**

Cardiac Consent may be required for donors with extensive/severe issues

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No Fee Phlebotomy Programs

Enrollment letters sent out to date in 2018

ATNT	**1135**	**aka Allogeneic Donors**
ALOT	**341**	
LOTH	**463**	
ALHH	**68**	
THHH	**16**	

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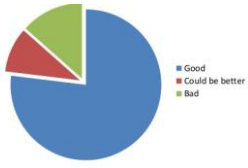
Client notification

- April 6, 2018
- May 8, 2018
- May 30, 2018
- July 16, 2018
- **Go LIVE – Tuesday, August 21, 2018**

Platelet Outdate %

- Unsustainable
- What can we do?



Plan to minimize platelet outdates

- Implement an extended shelf life (up to 7 days) with the use of Verax PGD® test
- Pilot: August – November 2018
- Test platelets on Day 6 at approximately 3pm
- ISBT product codes for Day 6
- 24 hour shelf life from time of testing
- Priority sticker

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Distribution plan

- Used primarily for STAT orders
- Returns not anticipated for STAT orders

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Cost of testing

- No additional cost to client

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Future Outlook

- Collaboration meeting – November 2018
- Review results of the testing
- Share ideas on how to improve outdates
- Return policy updates

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Verax Platelet PGD®

Rick Thornburg
July 20, 2018

VERAX PLATELET PGD® TEST

VERAX TESTING WORKFLOW

- Expiring products are taken out of inventory
- Products are relabeled with a temporary product code
- Products are delivered to Hematology for testing

TESTING

- The Verax Test is a lateral flow, qualitative test specific for the detection of gram positive and gram negative bacteria.
- The product is mixed with a variety of reagents and centrifuged.
- Plasma is decanted and the remaining pellet is resuspended and solubilized with additional reagents
- This solution is then introduced to the test device.

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TESTING

- As the solution migrates towards both ends of the device, internal controls on each end change color.
- Testing windows demonstrate reactivity with one or two red lines
- Non-reactive results are represented by no visible lines and internal positive controls changing color

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TESTING

Verax Test device

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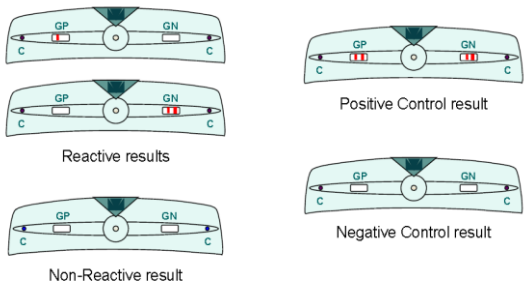
RESULT INTERPRETATION



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TESTING

- Products with confirmed positive results are further tested through inoculation in the BacT® system culture bottles and incubated for up to five days, or positive conversion.
- With confirmed positive culture results, a sample is sent to a reference laboratory for identification.

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TESTING/RELEASE

Confirmed negative results are labeled with a final product code and a 24 hour expiration and made available for delivery and transfusion.

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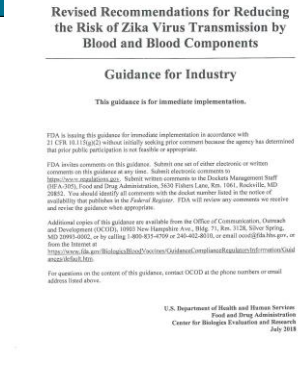
Zika Testing Update

Laurie J. Sutor, MD, MBA
Vice President of Medical and Technical Services, Carter BloodCare

Status of FDA Licensure of Zika Tests

- **Roche assay licensed for single donor testing on October 5, 2017 and for mini-pool testing on May 18, 2018.**
- **Grifols assay is pending licensure**
- **Carter BloodCare is still doing testing under an IND using the Grifols assay**



Revised Recommendations for Reducing the Risk of Zika Virus Transmission by Blood and Blood Components

Guidance for Industry

This guidance is for immediate implementation.

FDA is issuing this guidance for immediate implementation in accordance with 21 CFR 10.115(g)(2) without initially seeking prior comment because the agency has determined that prior public participation is not feasible or appropriate.

FDA invites comments on this guidance. Submit one set of either electronic or written comments on this guidance at any time. Submit electronic comments to https://www.regulations.gov. Submit written comments to the Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. You should identify all comments with the docket number listed in the notice of availability that publishes in the *Federal Register*. FDA will review any comments we receive and revise the guidance when appropriate.

Additional copies of this guidance are available from the Office of Communication, Outreach and Development (OCOD), 10903 New Hampshire Ave., Bldg. 71, Rm. 3128, Silver Spring, MD 20993-0002, or by calling 1-800-835-4709 or 240-402-8010, or email ocod@fda.hhs.gov, or from the Internet at http://www.fda.gov/BiologicsBloodVaccines/GuidanceComplianceRegulatoryInformation/Guidances/default.htm.

For questions on the content of this guidance, contact OCOD at the phone numbers or email address listed above.

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Biologics Evaluation and Research
July 2018

FDA Developments, July 2018

- Allows use of mini-pool testing with NAT (or ID NAT) similar to the West Nile algorithm
- Outlines the recommendations for triggering on and off of individual donor testing
- Requires the use of an FDA licensed test
- Will result in no more stickers on the blood bags
- Will require an update to the Circular of Information
- In date components from prior collections of positive donors should be retrieved (120 days)

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4

Expected Changes from CTS

- Changes to be implemented October 28, 2018
- This is when CTS inventory of non-licensed kits will run out
- IND study will stop
- Pricing will adjust
- Pooled testing will start
- Stickers on bags will go away

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Rare Inventory

Presented by:
Dorothy Blake, MLS(ASCP)cm
Medical Technologist III

Reference and Transfusion (R&T)

Rare Inventory

- **Many previously typed donor units get placed into the R&T department's "Special" inventory (i.e. SP), such as:**
  - **R_1R_1, R_2R_2, R_0r**
  - **High-prevalence antigen negative units**
  - **Multiple antigen negative units considered "rare" by ARDP**
- **VIP patients:**
  - **Patients that use frequently**
  - **Have needs that are considered "rare" by the ARDP**
  - **Just need a "rare" combination of antigens**

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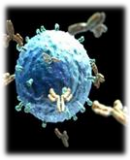
American Rare Donor Program (ARDP)

- Donor must meet one of the following to qualify as rare:
  - High-prevalence antigen negative (<1:1,000 donors)
  - Multiple common antigen negative:
    - K-, **AND**
      R_1R_1, or R_2R_2, or R_0, or rr **AND**
      S- or s- **AND**
      Fy^a– or Fy^b– **AND**
      Jk^a– or Jk^b-
    - K– **AND**
      R_1R_1 or R_2R_2, or rr **AND**
      R_1R_1 or R_2R_2 or R_0 or rr **AND**
      Fy (a-b-)



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3

R&T - VIP List

Daily VIP Patient RBC Search for: 07-06-2018 Page 1

[redacted] (13 in inv) A+ (C-,E-,Fya-,Fyb-,Jkb-,K-,S-)
TYL W035218492750-R O+ 07-05-2018 WB Historical Antigen Match to 2 patients

[redacted] (11 in inv) O+ (C-,E-,Fya-,Jka-,S-)
BDF W035218523877-U O+ 07-05-2018 DR Historical Antigen Match to 3 patients

[redacted] (13 in inv) A+ (C-,E-,Fya-,Fyb-,Jkb-,K-,S-)
TYL W035218492750-R O+ 07-05-2018 WB Historical Antigen Match to 2 patients

[redacted] (5 in inv) O+ (E-,Fyb-,Jka-,K-,M-,S-)
BDF W035218535074-* O+ 07-05-2018 WB Historical Antigen Match

[redacted] (9 in inv) O+ (c-,E-,Fya-,Jka-,K-,S-)
BDF W035218498489-* O+ 07-05-2018 WB Historical Antigen Match to 2 patients

[redacted] (12 in inv) O+ (c-,Fya-,Jka-,K-)
BDF W035218498489-* O+ 07-05-2018 WB Historical Antigen Match to 2 patients

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4

R&T - Patient Needs

Sickle Cell Disease (SCD)

- ❑ **According to the CDC:**
  - ➢ **SCD affects approximately 100,000 Americans**
  - ➢ **SCD occurs among about 1 out of every 365 Black or African-American births**
  - ➢ **SCD occurs among about 1 out of every 16,300 Hispanic-American births**
  - ➢ **About 1 in 13 Black or African-American babies is born with sickle cell trait (SCT)**

Sickle Cell Disease (SCD). (2016, August 31). Retrieved from https://www.cdc.gov/ncbddd/sicklecell/data.html

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5

R&T - Transfusions

- ❑ **Chronic transfusions are common for patients with sickle cell disease**
  - ➢ Studies have shown, to prevent alloimmunization of these patients, it is helpful to provide blood matched for their Rh (i.e. C, E, c, e) and K
  - ➢ Most hospitals also require these antigen negative matched units to be fresh (i.e. < 7 - 14 days old)

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6

R&T - Donor Pool

TABLE 7–2 FISHER-RACE HAPLOTYPES OF THE RH SYSTEM

Haplotype	PREVALENCE (%) White	Black	Asian
DCe	42	17	70
dce	37	26	3
DcE	14	11	21
Dce	4	44	3
dCe	2	2	2
dcE	1	< 0.01	< 0.01
DCE	< 0.01	< 0.01	1
dCE	< 0.01	< 0.01	< 0.01

Harmening, D. (2012). *Modern blood banking & transfusion practices*. Philadelphia: F.A. Davis.

R_0r units- 3% White, 23% Black, and 0.18% Asian
rr units- 14% White, 7% Black, and <0.1% Asian

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Collections & RBC Unit Donations

Ethnic group	Unique donors: Average annual no. ± SD	Unique donors: Average annual percentage of all donors	Donor fraction: Annual average ± SD	Collections: Average annual no. ± SD	Collections: Average annual percentage of all collections	RBC units donated: Average annual no. ± SD	RBC units donated: Average annual percentage of all units donated
Asian	48,080 ± 1,863	3.3	1.46 ± 0.02	65,271 ± 2,798	2.9	70,379 ± 3156	2.8
Black or African American	73,357 ± 6,592	5.1	1.41 ± 0.02	98,113 ± 8,928	4.4	103,163 ± 9073	4.1
Hispanic or Latino	117,619 ± 13,342	8.1	1.50 ± 0.03	157,223 ± 19,198	7.0	176,945 ± 21,878	7.1
American Indian or Alaska Native	11,833 ± 1,126	0.8	1.60 ± 0.05	16,960 ± 1,632	0.8	18,977 ± 1843	0.8
Native Hawaiian or other Pacific Islander	2,152 ± 177	0.2	1.54 ± 0.07	2,906 ± 214	0.1	3,317 ± 228	0.1
No answer/not sure	121,453 ± 21,007	8.4	1.13 ± 0.08	126,381 ± 23,959	5.6	137,102 ± 26,364	5.5
Multiracial/other	31,124 ± 3,720	2.1	1.31 ± 0.07	37,743 ± 4,074	1.7	40,802 ± 4,772	1.6
White	1,047,072 ± 116,388	72.1	1.85 ± 0.03	1,750,444 ± 198,084	77.6	1,940,056 ± 210,490	77.9

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Yazer, M. H., Delaney, M. , Germain, M. , Karafin, M. S., Sayers, M. , Vassallo, R. , Ziman, A. , Shaz, B. and , (2017), Trends in US minority red blood cell unit donations. Transfusion, 57: 1226-1234. doi:10.1111/trf.14039

Reference &Transfusion Unit Needs

2017	Antigen Negative Sickle Patients: Requests	Units Issued
January	86	981
February	62	907
March	64	916
April	72	957
May	82	754
June	92	1,025
July	68	939
August	80	941
September	75	942
October	72	1,042
November	90	952
December	71	1,035
Total	**914**	**11,391**

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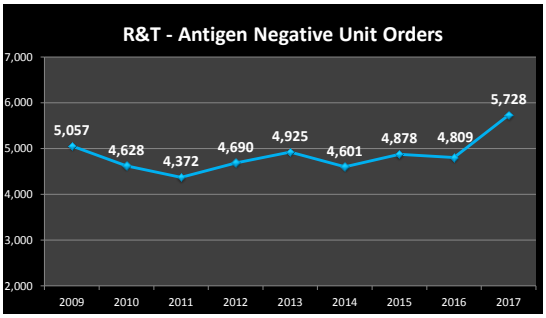
R&T Antigen Negative Orders



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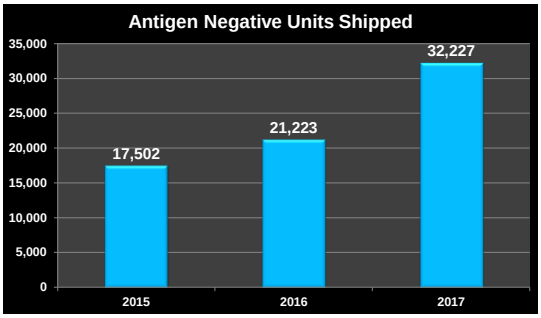
10

R&T Antigen Negative Orders



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11

R&T – Rh Screening of Donors

2015

CTS	R_o
2,474	403
3,919	550
2,768	244
2,349	260
11,510	1,457

2016

CTS	R_o
2,610	269
2,825	170
2,488	125
2,416	83
10,339	647

2017

CTS	R_o
2,769	74
2,358	51
2,331	51
2,019	45
9,477	221

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12

Case Study – Patient HHT

- **Patient in 2006 with a diagnosis of HHT (Hereditary Hemorrhagic Telangiectasia)**
  - We identified an Anti-E, -K in 2006
- **An HTLA follows with underlying Anti-E, and –K until 2008**
- **She goes missing and comes back with a card from another Blood Center stating she has also made an anti-Jk^b and –S**

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13

As the years go on…

- **While honoring the antibodies already made, she is slowly making more antibodies due to chronic transfusions**
- **8 Years later, we have her as Anti-C, -E, -K,-Fy^b, -S, and –Jk^b**
- **As well as a series of antibodies to low frequency antigens, such as: anti-Cw, -Js^a, -Kp^a,-V, and –Go^a**

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14

"Low Frequency"

- **This patient needing so many R_0 units has subjected her to antigens that are more prevalent in the Black population**
  - Js^a 20% positive in Blacks <0.01% positive in Whites
  - V 30% positive in Blacks 1% positive in Whites
  - Go^a 2% Positive in Blacks

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15

Antigen Negative Unit Count

Units used as of 07/01/2018: 63

Units used in 2017: 129

Units since 2006: 410

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16

In Conclusion

- Not only does reference and transfusion do antibody identifications, but we also work closely with our donor recruitment department in order to *save lives by making transfusion possible* for chronically transfused patients in the DFW area and nationally
- None of which would be possible without our dedicated donors, collections department and recruitment department

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17

Questions

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18

Bibliography

1) Harmening, D. (2012). *Modern blood banking & transfusion practices*. Philadelphia: F.A. Davis
2) Sickle Cell Disease (SCD). (2016, August 31). Retrieved from https://www.cdc.gov/ncbddd/sicklecell/data.htm
3) Yazer, M. H., Delaney, M. , Germain, M. , Karafin, M. S., Sayers, M. , Vassallo, R. , Ziman, A. , Shaz, B. and , (2017), Trends in US minority red blood cell unit donations. Transfusion, 57: 1226-1234. doi:10.1111/trf.14039

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