


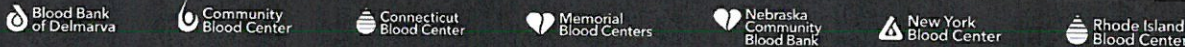
Community
Blood Center

innovation • experience • expertise



Virtual Learning in the Time of Covid-19

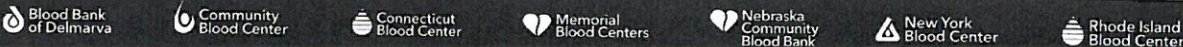
Shay Jones MLS (ASCP)^{CM}, BB^{CM}
IRL Technologist/Education Coordinator



1

Objectives

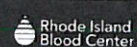
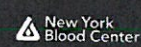
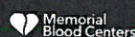
- Compare and contrast in-person learning vs. virtual learning
- Discuss options taken to provide virtual learning to customers
- Discuss plans for the future of education



2

Pre-COVID-19 learning

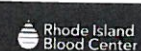
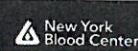
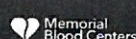
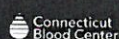
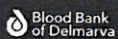
- Prior to COVID-19, Community Blood Center (CBC) held in person learning for CLS students, pathology residents and hosted a yearly Experience in Blood Banking (EBB) educational program for all CBC customers



3

Pre-COVID-19 Learning

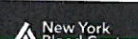
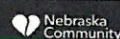
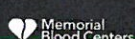
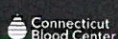
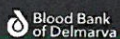
- CLS students (3 programs) and pathology residents (2 programs) spent 3-7 days in the IRL. SBB students spent 1 week in the IRL
- Time was spent providing supplementary education on ABO discrepancies, titrations, elutions and adsorptions, etc.



4

Pre-COVID-19 learning

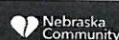
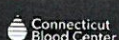
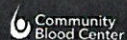
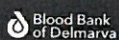
- Experience in Blood Banking (EBB)
 - Two day sessions for basic blood banking
 - One day session for advanced blood banking



5

Pre-COVID-19 learning

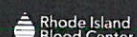
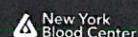
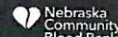
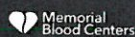
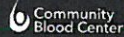
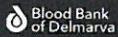
- Experience in Blood Banking (EBB)
 - Challenges:
 - Space limitations: 50 guests
 - Some interested guest were turned away
 - Had to create a second session to meet demand
 - Some interested guests unable to attend



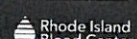
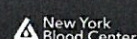
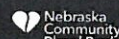
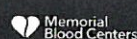
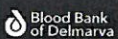
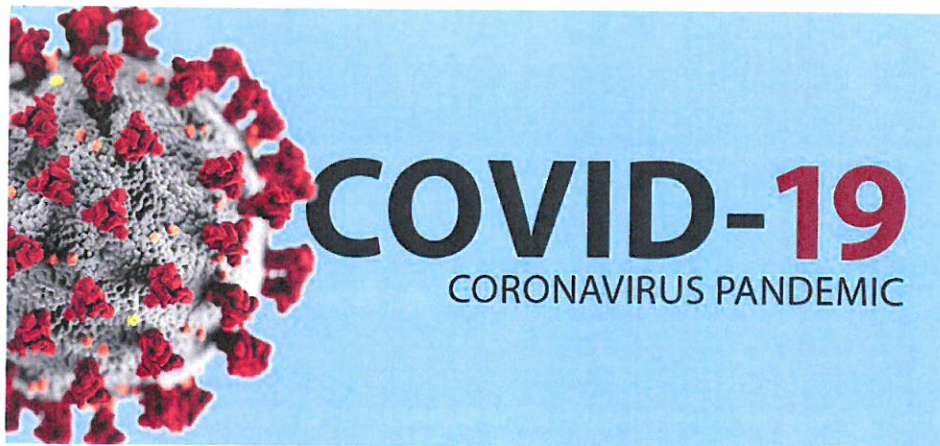
6

Pre-COVID-19 learning

- Experience in Blood Banking (EBB)
Challenges:
 - There was a lot required to prepare for visitors
 - Room setup
 - Parking
 - CBC provided morning coffee, snacks and lunches to attendees for each day



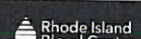
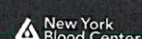
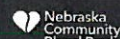
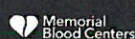
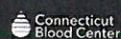
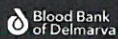
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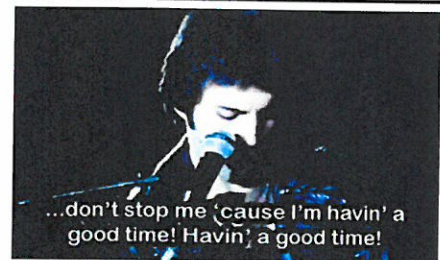
Changes to Education

All in-person learning was immediately cancelled.



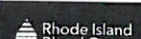
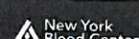
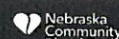
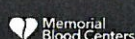
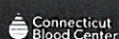
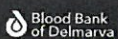
9

Changes to Education



The big question: How do we continue to provide education?

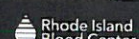
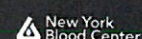
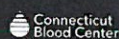
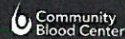
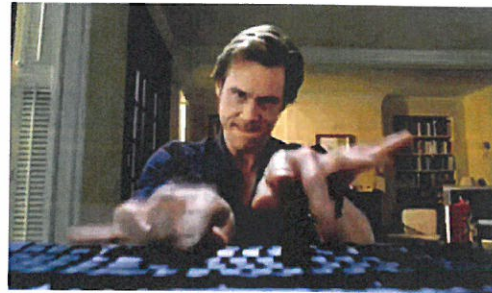
- CBC did not want to stop providing education



10

Changes to Education

- Rapid measures were taken to transition EBB to a virtual format.



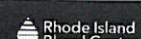
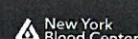
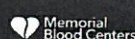
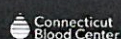
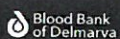
11

Virtual EBB



Initial Questions:

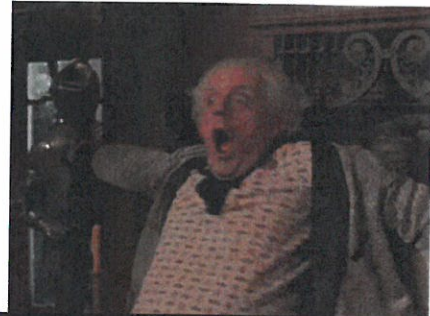
- What platform to use?
 - Needed something that was easy for presenters as well as attendees
 - Spent countless hours scouring different platforms before deciding



12

Virtual EBB

- Advanced EBB was set for August 2020
 - This gave us four months to prepare



13

Virtual EBB

- EBB 101 typically scheduled for February the following year (2021)
 - If EBB: Advanced – virtual was successful, this would set a blueprint for EBB 101

14

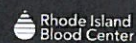
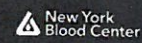
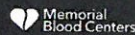
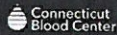
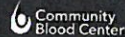
Virtual EBB

- CBC decided to pre-record the lectures while providing a live Q&A (Advanced & 101)
 - This was to meet the requirements of P.A.C.E

P.A.C.E.



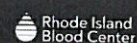
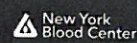
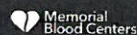
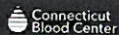
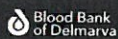
P.A.C.E.



15

Virtual Experience in Blood Banking

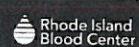
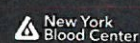
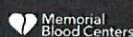
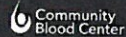
- Virtual meeting was cost effective
 - Lunches, snacks and other expenses were no longer needed
 - Platform was relatively cheap compared to live sessions



16

Virtual Experience in Blood Banking

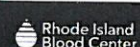
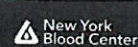
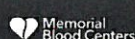
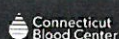
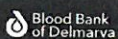
- Also allowed for more attendees
 - Facilities that normally weren't able to send techs were able with the virtual platform



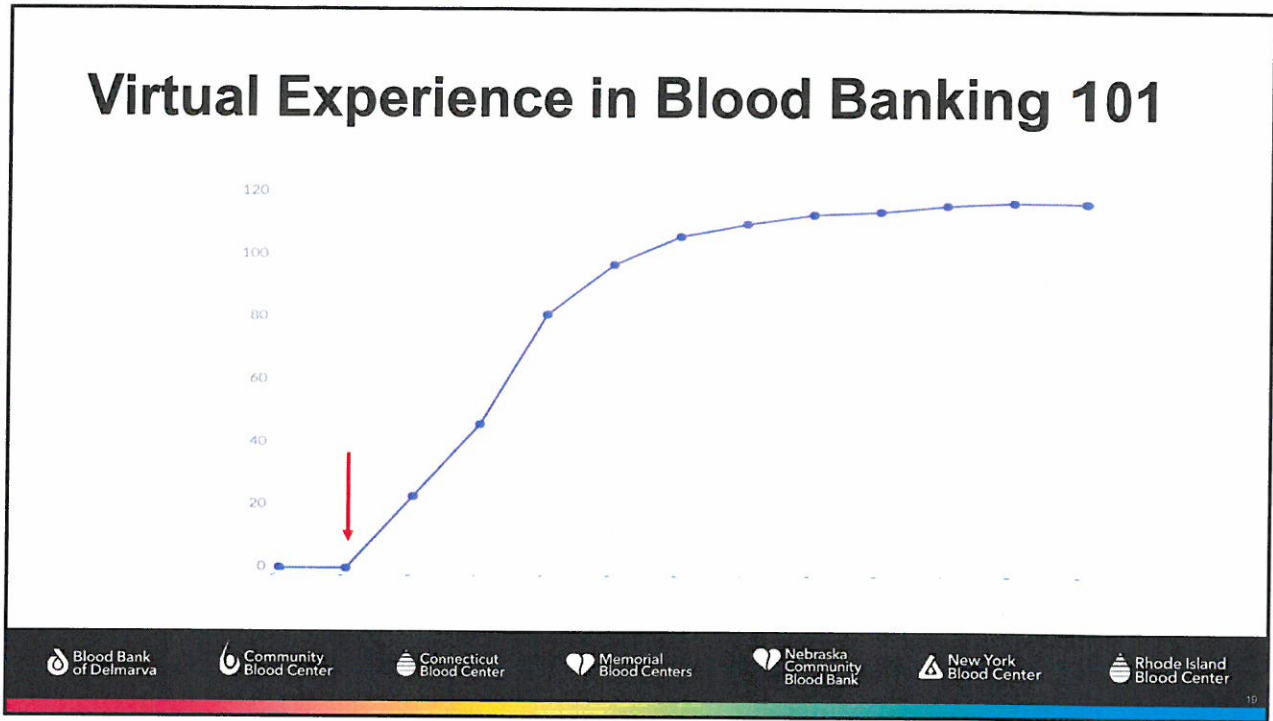
17

Virtual Experience in Blood Banking

- Less stress for staff presenting
 - Staff member had to be available for live Q&A
 - Prerecording allowed for staff to pick days
- Less stress on all laboratory staff



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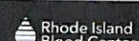
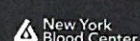
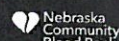
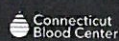
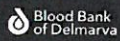
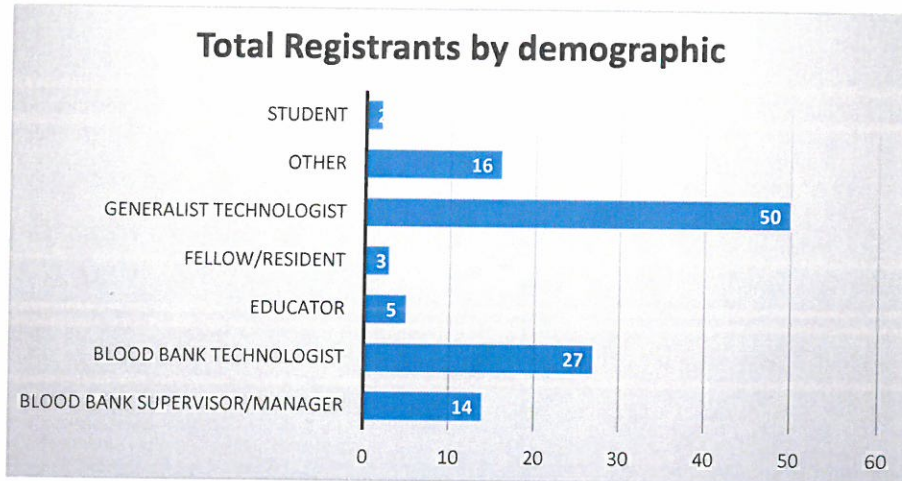
Virtual Experience in Blood Banking 101

- 117 total registrants
- 49 facilities

Logos at the bottom: Blood Bank of Delmarva, Community Blood Center, Connecticut Blood Center, Memorial Blood Centers, Nebraska Community Blood Bank, New York Blood Center, Rhode Island Blood Center.

20

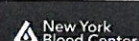
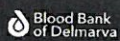
Virtual Experience in Blood Banking



21

Challenges of Virtual Learning – CLS & Pathology Visitors

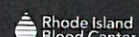
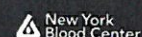
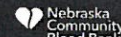
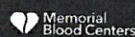
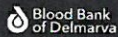
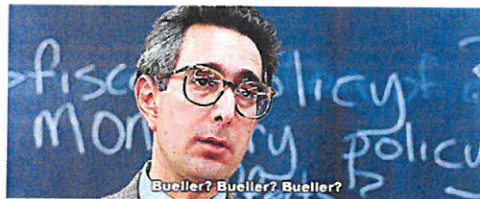
- Creating educational modules
 - What programs to use?
 - How to recreate in person environment?



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Challenges of Virtual Learning – CLS & Pathology Visitors

- How to keep students engaged?
 - Want to create modules that were interactive
 - Want to incorporate videos of processes



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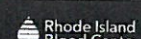
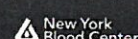
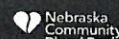
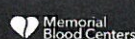
Challenges of Virtual Learning – CLS & Pathology Visitors

- How to ensure students would participate in the virtual learning?
 - Continued the use of post learning assessment
 - Created Expectations Guide



CLS Student Guide & Expectations for CBC Rotation

Prior to arriving at Community Blood Center (CBC), please complete the following:



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Challenges of Virtual Learning – CLS & Pathology Visitors

- Created learning modules
 - This allowed for interactive portions where students HAD to answer correctly

Case #1, question 1

Front Type				Back Type			
Anti-A	Anti-B	Anti-D	Rh Control	A ₁	A ₂	B	D
4+	0	4+	0	1+	Not tested	4+	Not tested

Which reaction is causing the discrepancy?

- A An extra reaction in the front type
- B A missing reaction in the front type
- C An extra reaction in the back type
- D A missing reaction in the back type

Prenatal Case Study #1

Sample of pregnant patient with anti-c submitted for titer. Titration studies of current sample performed in parallel with sample from 4 weeks ago.

What is the appropriate interpretation of both the current and previous sample?

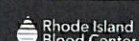
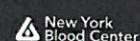
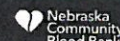
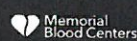
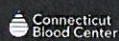
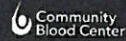
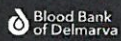
Titer	Heat plasma	1:2	1:8	1:16	1:32	1:64	1:128	1:256
c+ RBC, IAT	3+	2+	1+	0	0	0	0	0
Current sample								
c+ RBC, IAT	2+	2+	1+	0	0	0	0	0
Previous sample								

Previous sample anti-c titer=4; Current sample anti-c titer=8

Previous sample anti-c titer=4; Current sample anti-c titer=4

Previous sample anti-c titer=1:4; Current sample anti-c titer=1:8

Previous sample anti-c titer=8; Current sample anti-c titer=4



Virtual Learning – CLS Students

- Using the education webpage, created videos for students to learn and see processes virtually

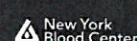
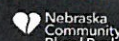
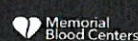
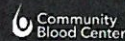
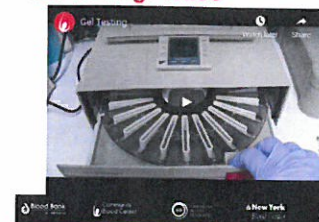
DAT testing: video



Preparing an eluate: video

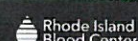
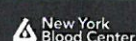
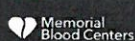
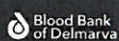


Gel testing: video



CLS & Pathology Visitors

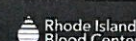
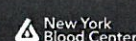
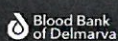
- After lockdown, CBC allowed to have 1 visitor at a time
 - Wanted their time spent at CBC to be limited
 - Masks and temperatures must be taken
 - Created the COVID-19 Visitor Policy



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CLS & Pathology Visitors

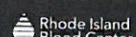
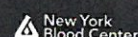
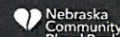
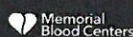
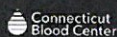
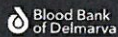
- Inevitably had a back log
 - CLS/Pathology programs were very understanding
 - It took two months of constant educating



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Virtual Learning – CLS Students

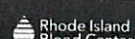
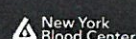
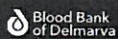
- We needed students as prepared as possible for their decreased time in the lab
 - Focusing on performing tasks, not theory
 - Created handbook to go over theory
 - Videos helped students see process prior to performing



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Virtual Learning – Pathology Residents

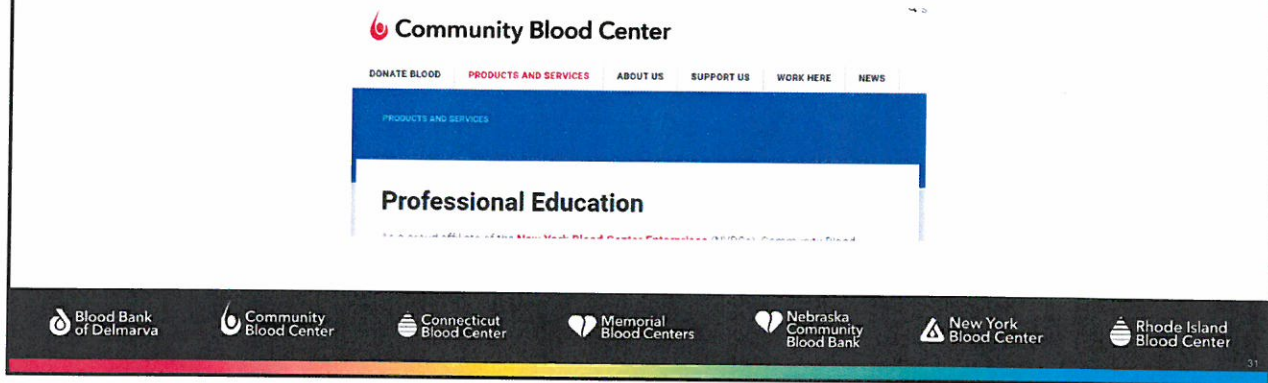
- Created modules as well
 - Same focus as CLS modules
 - Only IRL specific
 - Unable to create virtual experience for other areas of the blood center



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Education Webpage

- Created an education-based webpage to contain the lessons created



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Education Webpage

Laboratory Science Student Resources

Explore blood bank resources especially for laboratory science students.

Tube Testing, SPiCA, and Gel - A Comparison

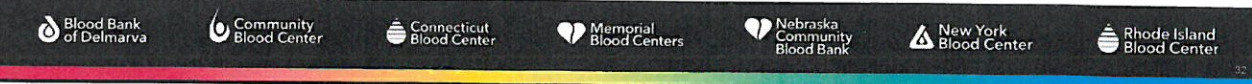
Method	Advantages	Disadvantages
Tube Testing	Simple, low cost, and easy to perform.	Time-consuming and prone to human error.
SPiCA	Automated and consistent results.	Higher cost and requires specialized equipment.
Gel	Fast and easy to perform.	Requires specialized equipment and can be expensive.

Resident Rotation: Immunohematology Reference Laboratory

These modules are designed to provide residents with instruction on the fundamentals of immunohematology, beginning with ABO testing and concluding with the complexity of differential adsorptions.

Immunohematology Method Videos

Watch videos of how to perform common blood bank methods, including blood type, antibody screen, and much more.



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Virtual Learning Update

- In August of 2021, visitors were allowed back into CBC – no restrictions

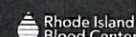
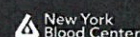
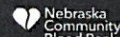
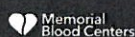
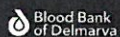


Virtual Learning Update

- Continued to use learning modules
 - Allows students/residents to learn theory prior to coming
 - Videos allow students/residents to see processes before performing them
 - Maximizing time spent in the laboratory

The Future of Education

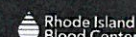
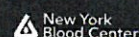
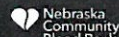
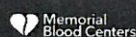
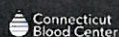
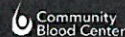
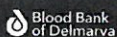
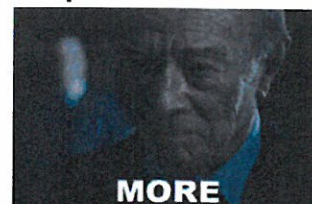
- The use of the virtual modules helped prepare the students
 - Anecdotal evidence only
 - Have seen assessment scores remain stable
 - More data is needed to see if there is an observable trend



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The Future of Education- CLS/Residents

- Initially, modules were used to help limit the time students were at CBC
 - Meetings with students has shown that maybe we can use the modules to allow them to perform more while at CBC



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The Future of Education - EBB

- Virtual lectures will never go away
 - Allows for more attendees
 - Allows individuals to attend “on demand” to fit their schedule

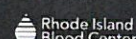
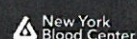
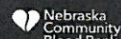
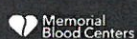


The Future of Education - EBB

- Goal is to go back to in-person EBB
 - Some learners may learn best in a group environment – CLS students especially
 - Allows for networking and face-to-face interaction
 - Possible live stream for virtual attendees

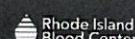
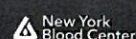
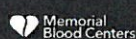
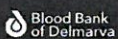
The Future of Education

- Create a virtual tour of CBC
 - Allows for in depth look at all departments
 - Could be used internally




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Questions?



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innovation • experience • expertise

Blood Bank of Delmarva Community Blood Center Connecticut Blood Center Memorial Blood Centers Nebraska Community Blood Bank New York Blood Center Rhode Island Blood Center