From the Clinical Laboratories of the
Cancer & Blood Diseases Institute

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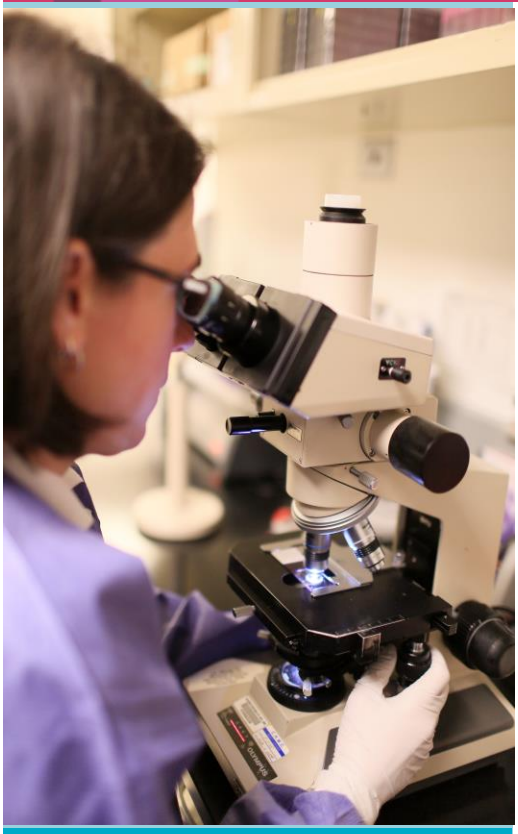

IN THIS ISSUE:

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Transport of Specimens during Winter months

Specimen packages shipped overnight by commercial carriers can be subject to extreme seasonal temperatures. Most of our packages route through Memphis, where temperatures during the winter months often dip to 0°C. In order to protect the integrity of **ambient** specimens, extra packing material may be helpful. A study done at the University of Virginia [(1)] found that insulating bagged specimens in paper towels and placing a "warm pack" (heated to 37°C.) on top can extend the amount of time specimens remain protected from extreme cold (see Figure 1). Packing for the weather can mean the difference between moving ahead with testing or asking for a recollection.

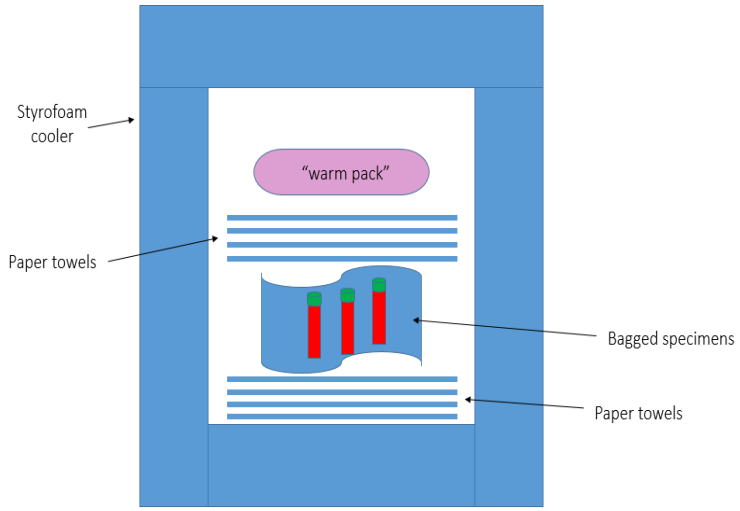

Figure 1. While we do **not** recommend heating patient specimens to 37°C., a gel pack pre-warmed at 37°C. and placed inside the shipping container helps to maintain an ambient evironment during winter transport.

References:

1. Olsen Walter C, et al. Shipping blood to a central laboratory in multicenter clinical trials: effect of ambient temperature on specimen temperature, and effects of temperature on mononuclear cell yield, viability and immunologic function. *Journal of Translational Medicine.* doi: 10.1186/1479-5876-9-26. *Epub* 2011 Mar 8.

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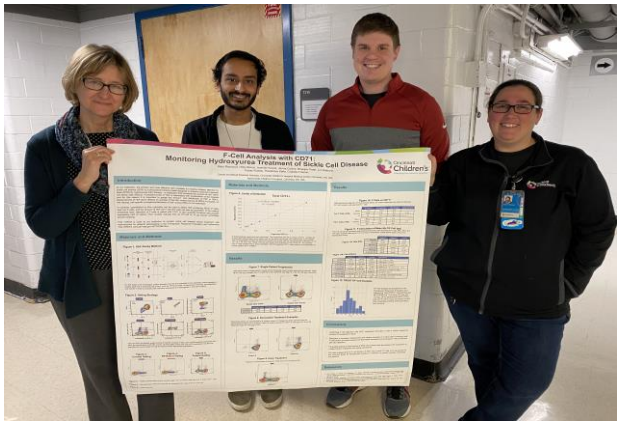
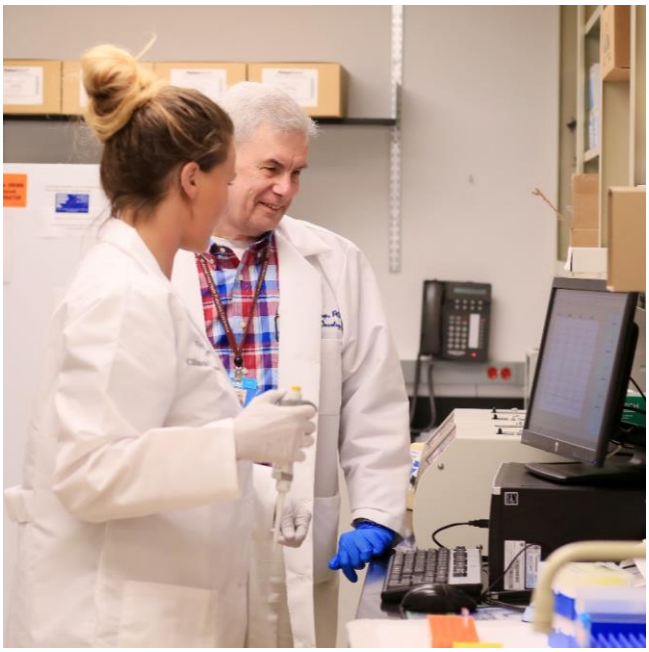
F-Cell Analysis with CD71: Monitoring Hydroxyurea Treatment of Sickle Cell Disease

Members of the CBDI Clinical Laboratories recently presented a poster at the 2019 International Clinical Cytometry Society (ICCS) Annual Meeting. The flow cytometry method featured adapts the detection of HbF and CD71 on red blood cells (RBCs) for use in monitoring the efficacy and compliance of treatment for sickle cell disease with hydroxyurea. The data in the poster were from patients participating in the Therapeutic Response Evaluation and Adherence Trial (TREAT, ClinicalTrials.gov NCT02286154). Hydroxyurea increases the amount of HbF within RBCs and this increase is associated with amelioration of symptoms. Pairing the detection of F cells with CD71 enables us to quantify immature reticulocytes expressing HbF (F-retics). In addition, use of the F-Cell % and other hematologic parameters (Hb, RBCs/ul, MCH) enables the determination of mean HbF per F-cell. We have found this to be a robust method to monitor hydroxyurea treatment in sickle cell disease. Our data suggest that an F-cell fraction of 80% and a mean F/F-cell of 10pg should be the minimum goals for hydroxyurea therapy to minimize or prevent sickling, hemolysis and anemia.



Members of CBDI Clinical Laboratories that contributed to the poster are L to R: Mary Reynaud, Bhargav Patel, Jon Stehura, and Holly Bonar. Absent are Jennifer Korpik, Jenna Collins, Cesar Rueda, Dr. Theodosia Kalfa and Dr. Charles Quinn.



Soluble IL-2 Receptor Assay Update

Our laboratory recently re-evaluated our pediatric ranges for the Soluble IL-2R assay. These ranges were originally established in 2007. Current patient charts will reflect these updated ranges. In addition, we also validated serum as an acceptable specimen type. The serum sample can be collected in either a red top or gold top tube. Stability of a submitted red/gold tube for this test remains the same as a lavender tube. If the sample is sent as whole blood, it must reach our laboratory within 24 hours. If the sample is spun, aliquoted and sent frozen, it must remain frozen until it reaches our laboratory. When sending frozen samples, please indicate whether the aliquot is plasma or serum.

If you have any questions about specimen submission that are not answered by our requisition, feel free to contact our customer service department at 513-636-4685. Office hours are 9:00am to 5:00pm, Monday thru Friday. Alternatively, you may leave an email at CBDILabs@cchmc.org .

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New Critical Care Building

In July of 2018, construction began on CCHMC's new Critical Care Building. The proposed project includes:

- 224 new beds for PICU, CICU, NICU and Bone Marrow Transplant
- Embedded operating rooms for Cardiac and Fetal Surgery
- New Emergency Department and Urgent Care
- Helipad
- Kitchen and dining space
- Support space for employees and families
- Pharmacy, Laboratory and Sterile Processing expansions
- Repurposing and renovation of older patient rooms

So far, we are on budget and scheduled to open the new facility in November of 2021. A team of over 200 clinicians, staff, architects, medical planners, patients, and families helped create a design that is compelling and will support our Vision to be the leader in improving child health for decades to come.

New Laboratory Information System

On October 26th, 2019 all CCHMC laboratories transitioned to a new Laboratory Informaiton System (LIS). We anticipate that the new system will enable us to enhance our ability to provide quality laboratory services to our clients. To prepare for the conversion, more than 300 CCHMC laboratory employees attended over 600 hours of classroom training.

For our referral clients, the ordering process for testing remains the same but we have updated the patient charting system. If you experience a problem with any aspect of our services, please feel free to contact our customer service department with any concerns you have. We always welcome client input and have a team of experts on site to help us address issues quickly. You can reach our customer service department by calling 513-636-4685 or by leaving an email at CBDILabs@cchmc.org

BULLETIN BOARD

Winter Meeting

Thanks to everyone who stopped by our booth to say "hello" at the American Society of Hematology (ASH) meeting in Orlando, FL this December. We always look forward to seeing our clients in person and meeting new faces as well!

Ackknowledgments

The authors would like to thank Mary Reynaud for her contribution of the Sickle Cell Disease Poster portion of the newsletter.
The newsletter content writer is Sabina Sylvest.
The newsletter editor is Rebecca Marsh, M.D.