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Core Laboratory Update



Background

The Core Laboratory is our high-volume and automated laboratory responsible for producing 70% of the patient testing volumes within HRLMP. Our Medical Laboratory Technologists (MLT) and Medical Laboratory Assistants (MLA) work 24/7, 365 days a year to support our emergency rooms, intensive care units, medical and surgical patients, hospital clinics, research activities as well as our Laboratory Reference Centre clients. We provide general chemistry, immunoassay, toxicology, blood gas, urinalysis, cell counting and routine coagulation testing.

Why are we restructuring the core laboratory?

In early 2010, we began to examine the current state of the core laboratory. This process involved the careful review of financial and staffing resources, workload and workflow review, capital equipment and capacity and alternate multi-sited models currently in operation in other locations.

Our goal in this process was to create a sustainable model that would take us into the future. Our commitment was to improve and protect future service levels. This model would reduce redundancy in capital equipment across the core laboratories and improve our efficiency. Our major automated chemistry platform had exceeded its life expectancy and required replacement. Decisions around the model were essential before a capital investment in new equipment could be made. The current state of the Ministry of Health budget remained a consideration in this process.

The core project team reviewed models across the country and into the United States. After review of the data and options a decision was made to move to a hub and spoke model of service, with the hub site at the Hamilton General Hospital, and local core laboratories at Juravinski Hospital, McMaster Children's Hospital and St. Joseph's Healthcare Hamilton.

Your feedback, suggestions and new ideas are welcomed. Submit to the Editorial Office:
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An RFP for automated chemistry equipment was issued to support the new model and the Abbott Architect family of analyzers was selected. Following implementation of the Architect analyzers, the second phase of this change involves the implementation of an automated line for specimen centrifugation, delivery to the analyzers and post analytical storage at the Hamilton General site.

Several working teams have been created with a total of 79 participants including technical, management and professional staff and residents. Staff participation has been tremendous. Most teams meet every two weeks to plan and prepare for the changes within the new model. Staff not involved on the teams continue to ensure that our Core service is not compromised as we prepare to transition to the new model.

What are the advantages of the new model?

The core lab project is the largest project undertaken since the inception of the HRLMP. The project charter contains over 1700 tasks to be completed for implementation of the new model. To date, we have made great progress and have completed approximately 50 % of the project tasks.

With the implementation of the core lab model, the local core sites will transport all routine specimens to the hub site at HGH during specified hours. This will allow the local core laboratories to focus their efforts on stat and urgent test requests. Test menus for each site have been developed to support the unique patient population at each site. Pediatric samples will continue to be analyzed at the MUMC site.

A call centre is being created to better serve our hospital clients. The call centre will provide service for core lab inquiries including specimen status, results, and add-on testing.

For our Laboratory Reference Centre clients, the change should be seamless. Our plans to implement the automated line at HGH and the Data Innovations middleware and BioRad Unity electronic quality control software will enhance our ability to continue to provide excellent service to our clients.

When do we go live with the new model?

The anticipated live date for the implementation of the new Abbott Architect analyzers is expected in early 2013. We will continue to provide updates to our clients as we move forward with this exciting project.

HRLMP Structure Changes

A new structure has been created within the HRLMP which will assign a single point of administrative leadership for the laboratory operations along with a dedicated leadership role focused on planning and support for business operations.

Effective August 7, 2012:

Duane Boychuk becomes Director of Operations – HRLMP



In collaboration with our professional staff, Duane will be responsible for the leadership and management aspects of HRLMP's laboratory operation services, including the support of our

research and educational activities.

Brenda Rafter-Tadgell becomes Director, Business Planning – HRLMP



In collaboration with management staff, professional staff and hospital redevelopment teams, Brenda will be responsible for business support, redevelopment processes and special projects for all areas of the HRLMP operations.

Duane and Brenda will work together along with the discipline directors and the management team over the coming weeks to transition into their new roles.

Congratulations to both of them!

Education News

Linda Kocovski (PGY2, Anatomical Pathology) has two oral presentations scheduled for the National Association of Medical Examiners Annual Meeting in Baltimore, Md in October 2012. She will be presenting a case of Sudden Cardiac death in a 14 year old due to myocardial infarction complicating hypertrophic cardiomyopathy and a case of death due to *Raoultella planticola* peritonitis.

The Forensic Pathology training program is pleased to welcome **Dr. Muditha Kudagama** into a one year fellowship.

Jocelyn Srigley (PGY6, Medical Microbiology) has received a Quality Assurance award for her project titled "Appropriate use of antibiotic treatment prior to diagnosis of hospital-associated *Clostridium difficile* infection".

News from Pathology

Please join us in welcoming several new faculty members to the HRLMP.

Dr. Amal Abdel-Mesih, a McMaster graduate, has become a staff pathologist at St. Joseph's Hospital after successfully completing a Head and Neck fellowship. She has already become actively involved in teaching within our residency program.

Dr. Jaspreet Toor is a new contract part time pathologist at St. Joseph's Hospital. She passed her Royal College Pathology exam which nicely complements her U.K. pathology qualifications.

Dr. Mihaela Marinescu is a new contract pathologist at the JHCC site. She just completed her fellowship in Urological Pathology with Dr. Srigley.

Dr. Hamidreza Faraji has joined the Anatomical Pathologists at the MUMC site and is covering the full range of AP.

News from Hematology

We are pleased to announce the following appointments:

Karen Moffat has taken on the role as **Supervisor Special Hematology**. Karen has worked at HHS for many years as an MLT and was recently employed as a Technical Specialist in Coagulation. She holds a Bachelor of Education, received the award for Distinguished Fellowship from CSMLS, and is currently completing her Master of Science, Health Research Methodology School of Graduate Studies at McMaster University.



Andrew McFarlane has taken on the role of **Supervisor, Molecular Hematology and Molecular Genetics/ Cytogenetics**. Andrew has been an MLT at both HHS and SJH and was previously a Technical Specialist in Molecular Hematology and Genetics. He holds a Master of Science – CRA and is a lecturer for the Department of Medicine at McMaster.



These new roles came into effect on July 3, 2012.

News from LIS

Sue Frasson has joined the LIS group in a temporary Technical Specialist position. She brings a wealth of LIS and laboratory experience to this role and will be actively involved in supporting the core lab through its transition.

News from Microbiology

The virology laboratory officially changed their serology test platform from the Abbott AxSym platform to the Abbott Architect for Hepatitis A and B, CMV IgG and Rubella IgG testing on July 23, 2012. The Abbott Architect utilizes chemiluminescent Microparticle Immunoassay (CMIA) technology and represents the "next generation" of automation for viral serology in our laboratory. Eventually most viral serologic testing will be done on the Architect.

Post-consolidation Update

It has been 6 months since bacteriology was consolidated at the Hamilton General Hospital site and the metrics look great! Since consolidating, we have reduced the turn around time for reporting positive gram stains from blood cultures by more than 50%. There has been a 20% reduction in the time to process sterile tissues and fluids. Other markers have been stable or shown improvement and all of our quality indicators have been maintained!

News from Genetics

We are very pleased to announce the arrival of two new professional staff in Genetics.

Dr. Bekim Sadikovic has been appointed as the **Head of Advanced Molecular Diagnostics**. He completed his training at the University of Western Ontario, and then completed fellowships at the University of Toronto and through the American Board of Medical Genetics (ABMG) in molecular genetics and cytogenetics at Baylor University in Houston, Texas. Dr. Sadikovic will be active in the services of cytogenetics, molecular genetics and cancer genetics.

Dr. Elizabeth McCready will be appointed as the **Head of Molecular Cytogenetics**, effective September 4, 2012. She is a McMaster graduate who completed graduate studies at the Universities of Toronto and Ottawa, then completed post-doctoral training in Ottawa. She has Canadian College of Medical Geneticists (CCMG) fellowships in cytogenetics and molecular genetics. Dr. McCready will be active in the services of cytogenetics, molecular genetics and cancer genetics.



Core Laboratory meets the needs of Grand River

In early April, the Microbiology lab at Grand River Hospital had an unexpected emergency at its facility. Almost immediately, services came to a halt within the Microbiology and Core laboratories. Although the workload transfer initially involved only Microbiology,

within a few weeks the second request came to Hamilton requesting assistance with Core, Chemistry and Immunology testing. At the beginning, Grand River had sent their Core and Chemistry testing to the St. Mary's site in Kitchener. This arrangement was difficult to sustain.

Grand River had concerns about sending Core, Clinical Chemistry and Immunology specimens such a distance. We worked with Grand River to establish turn around times that took into account the transportation challenges, testing and reporting of results. Our primary concern was working together to minimize impact on patient care.

MLA and MLT staff were tremendously responsive to the need for additional hours and shifts and volunteers came forward readily as the work came in. Lab staff members worked double shifts or came in on weekends to support this activity. Some days we had over 300 additional requisitions to register and over 500 additional tests to analyze. To put this in perspective, on an average day we process 2300 samples at the General Core site between our hospital and LRC clients. Support from our LIS team and ICT at HHS and Grand River enabled us to release reports electronically directly to the Grand River site.

The Core and Chemistry laboratories at Grand River reached out to us for assistance in obtaining specimens to validate their analyzers as they began the process of bringing the lab back into operation. The Core laboratory staff across the city responded to requests for toxicology specimens for correlation studies. We worked with Niagara Health System to ensure we could obtain enough material for the Grand River team. At this time Grand River laboratory has brought almost all testing back into operation.

It has been a learning experience for all of us within the LRC, Microbiology and Core and Clinical Chemistry laboratories. We have demonstrated a tremendous ability to respond to unexpected requests and handle additional workload with little notice. We have worked collaboratively together as a team at the General site to develop procedures to meet the needs of our clients. Thank you and congratulations to our dedicated laboratory staff for all your efforts to assist Grand River in their hour of need. Job well done!