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Snapshot of this edition:

- Fecal Occult Blood Testing is useful for colorectal cancer screening in asymptomatic patients, but not helpful in hospitalized patients
- Paradigm 3 successfully launched!
- Dr. Christine Lee will be finishing her team as Discipline Director for Microbiology
- Read about changes to ordering red cell concentrates for Sickle Cell patients
- Celebration of Life Service for Rhonda Birse Saturday April 25, 1-4pm at the Holiday Inn in Burlington

Getting the Scoop on Poop! Fecal occult blood testing in the hospital setting

Colorectal cancer (CRC) screening by using a fecal occult blood test (FOBT) has been well validated for asymptomatic patients in the outpatient setting. ColonCancerCheck is the Ontario public organized screening program that began in 2008 to reduce deaths from colorectal cancer and to support health care providers in this screening. The detection of hemoglobin in stool was developed for this express purpose, however, it is also used within the hospital setting for patients who have symptoms which suggest a gastrointestinal bleed. The use of this test for non-CRC purposes may not be providing the information expected due to false-positive and false-negative results and subsequently to unnecessary or delayed diagnostic testing. Literature on the subject of inpatient occult blood testing shows that this test is unlikely to change patient management. Guidelines from organizations such as the Scottish International Guideline Network, National Institute for Health and Care Excellence (NICE), and British Society of Gastroenterology, also comment on the limited use of FOBT in symptomatic patients.

Scope of practice

To gain a perspective on the current use of FOBT in hospital settings, a survey was conducted by the LHIN 4 Regional Laboratory Project Point of Care Working Group (now called the Hamilton Niagara Haldimand Brant LHIN)¹. This survey of nine questions, carried out between December 2011 and January 2012, was sent to health care providers working outside of the laboratory. Ten hospital or hospital systems received an invitation to participate in the survey. Sixty-eight physicians and nurses responded, of which most were from the emergency department or urgent care setting (60.3%), and the remainder were from a wide variety of clinical areas. Indications for ordering an occult blood test are shown in Table 1 (more than one response was allowed) with the two key reasons
being symptoms potentially consistent with gastrointestinal bleeding and for investigation of anemia. When asked what determined how the test was ordered, 16.4% of the respondents answered that it came from a medical directive, standard practice guideline or care path/order set. The guaiac based test, used by all sites, includes sample collection, processing, and recording. Approximately half of the time all of the steps were performed by one person at point of care and few results ended up in the patient’s electronic medical record. Knowledge about potential interferences due to diet or medications was identified by just over half of the respondents but few knew there was minimum contact time for the stool to be on the paper before adding the developer. In the majority of cases (86.7%), this test was used to decide on which further investigations would be done and also to determine how the patient would be triaged.

### Indications to order an occult blood test

<table>
<thead>
<tr>
<th>Indication</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms potentially consistent with gastrointestinal bleeding</td>
<td>83.8%</td>
<td>57</td>
</tr>
<tr>
<td>Anemia for investigation</td>
<td>52.9%</td>
<td>36</td>
</tr>
<tr>
<td>Iron deficiency with or without anaemia</td>
<td>30.9%</td>
<td>21</td>
</tr>
<tr>
<td>Overt gastrointestinal blood loss</td>
<td>26.4%</td>
<td>18</td>
</tr>
<tr>
<td>Screening for colorectal cancer</td>
<td>25.0%</td>
<td>17</td>
</tr>
<tr>
<td>Consult for gastroenterology</td>
<td>11.7%</td>
<td>8</td>
</tr>
<tr>
<td>Non-bloody diarrhea</td>
<td>10.2%</td>
<td>7</td>
</tr>
<tr>
<td>Pre-initiation of anticoagulation with warfarin</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
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<td>6</td>
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</table>

*Respondents, n = 61*

### Practice realities

A retrospective chart review over a three month period in 2011 at two Hamilton Health Sciences Hospitals found 229 patients (1-104 years old) had 351 FOBT results documented of which 79 patients had two or more tests done (range 1 – 6). Endoscopic investigations were ordered for only 50% of patients with a positive FOBT (n=80) and also in 4 patients with a negative FOBT; results were available for only 31 patients in which 14 had both esophagogastroduodenoscopy and colonoscopy performed. The major indication for ordering the test was for anemia (n=117, 51.5%) of which 51 of these patients had at least one positive FOBT and only 18 were referred for endoscopic investigation; results were available for 14 and a potential cause identified in 8 patients for a yield of 6.8%. Overt bleeding was identified in 44 (19.2%) patients but the FOBT test failed to detect blood in eight of these. Only 24 of these patients were referred for an endoscopic investigation with a cause identified in 17 of 18 available results. Twelve of the overt bleeders had delayed investigations pending the result of the FOBT. Other reasons for ordering an FOBT included suspected bleeding disorders (defined as a decline in hemoglobin), but also non-bloody diarrhea, and dyspepsia. Most patients (85.1%) used one or more medications that could affect the FOBT and only 21 patients had documented dietary restriction. Medications included acetylsalicylic acid, unfractionated or low-molecular heparin, warfarin, clopidogrel, nonsteroidal anti-inflammatory drugs, selective serotonin reuptake inhibitor and vitamin C. Only 18 patients had a digital rectal examination (DRE) of which seven were positive. Thirteen patients spent a total of 26 additional days in the hospital being prepared for the procedure or stayed longer due to consequences of colonoscopy. The chart review was limited to FOBTs performed in the laboratory and not at point of care.

### Conclusions

There is a belief that fecal occult blood testing is useful in a hospital setting and the quality of patient care is improved by it. The results of the local audit in Hamilton along with another audit in Canada and in other countries all find that patients rarely benefit from this test. Rather, there are harms with unnecessary or delayed patient investigations, little effect on clinical decision making and costs to the healthcare system. Furthermore, FOBT at point of care is not performed with the same rigor of technical expertise as in the laboratory and the result does not appear in the patient’s laboratory test record. Proper patient assessment including history, physical examination, DRE, and other
laboratory tests are sufficient to make clinical decisions. There is no proven role for FOBT in acute care hospitals for assessment of patients with gastrointestinal bleeding.

Cynthia Balion, PhD, FACB
Clinical Biochemist, HRLMP

References:


News from the HRLMP

Congratulations to everyone as we celebrate National Medical Laboratory Week!

This year, the CSMLS’ theme for National Medical Laboratory Week is “We’re Here for You.” This statement truly reflects the important role that Medical Laboratory Professionals play on the healthcare team.

We would like take this opportunity to thank each one of you for the work that you do each day for our patients. Each day we see your commitment to patient care and patient safety, as well as your commitment to the profession and to each other.

This is a chance for us to celebrate our entire team: Medical Laboratory Technologists, Medical Laboratory Assistants, Pathologist Assistants, Morgue Technicians, Medical /Scientific and Clerical staff.

Dr. V. Alexopoulou and Duane Boychuk

Quality Management System – Paradigm 3: Behind-the-scene details

Paradigm 3 has been successfully implemented for use in the HRLMP as of Monday March 23rd. We are looking forward to utilizing the enhanced functionality to improve the management of our Quality Management systems. Congratulations to Tom Dorland, as project lead. There are always many behind the scenes details necessary in an upgrade of this nature that go unrecognized. Great job Tom!

Cathie McCallum, Quality Specialist, HRLMP

Education News

Royal College external reviews have been successfully completed for the Anatomical Pathology, General Pathology, Medical Biochemistry and Medical Microbiology training programs. All 4 programs have been given full approval. Thank you to all who have assisted with preparing for these reviews and for your support of the Program Directors throughout the review
The first Resident Research Grant Competition for 2015 has concluded and the grant recipients are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Fellowship Level</th>
<th>Program</th>
<th>Title</th>
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<tbody>
<tr>
<td>Kak, Ipshita</td>
<td>PGY3</td>
<td>General Pathology</td>
<td>Ultrastructural correlation with Cytology findings in fluids from tumoral cases: a useful adjunct to the diagnostic algorithm in difficult cases</td>
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<td>Shih, Andrew</td>
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<td>Cytology Clin Fellow Yr.1</td>
<td>Assessment of the Measurement Error in Cyclosporine Levels Drawn Between Peripheral and Central Sources</td>
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<td>Trans. Med Trans. Med</td>
<td>R7</td>
<td>Antibodies of undetermined significance in solid-phase technology, exploring its impact on Transfusion Medicine routine testing and the possible associated patient factors</td>
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<td>Brett, Mary Anne</td>
<td>PGY2</td>
<td>Anatomical Pathology</td>
<td>Bile Duct Brushings and their Accuracy and Terminology Used: An Institutional Review</td>
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<td>Borowy-</td>
<td>PGY4</td>
<td>Anatomical Pathology</td>
<td>Role of C-MYC in Low Grade Follicular Lymphoma with High Proliferation Index: A Marker of Aggressive Behaviour</td>
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<td></td>
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<td>Brett,</td>
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The Laboratory Medicine Training Programs will be welcoming the following trainees into their programs in July 2015.

**Anatomical Pathology:**
- Soha Ramadan
- Christine MacColl

**Clinical Chemistry**
- Terence Agbor

**Forensic Pathology:**
- Andreea Nistor

**General Pathology:**
- Christopher Ma
- Jason Kassel

**Genetics:**
- Muneera Al-Shammari

**Medical Microbiology:**
- Amir Hadzi
- Bandar Albaradi

**Medical Biochemistry:**
- Waleed Alomaim

**Health and the whole person: A Healing Arts Conference**

**May 27, 2015, Royal Botanical Gardens**

The scope of the health humanities is broad – encompassing topics as diverse as art, music, drama, narrative, history and philosophy. Research has shown that a study of the health humanities can help us better understand the patient’s experience of illness, and enhance our ability as health professionals to bear witness to their suffering. Also, healers who pursue their interests in creative and intellectual endeavours, both in their clinical work and their personal lives, often report higher levels of professional satisfaction, personal well-being and resilience.

This one-day conference draws together clinicians, scholars and students from a broad range of disciplines, creating an environment for a rich exploration of the health humanities. Dr Allan Peterkin, founder of the Health, Arts and Humanities program at the University of Toronto, will present the keynote address. Other events include a panel discussion, presentations, interactive workshops, and a music performance.
The following workshops will be offered:

**Mindful Movement:**
Exploring the Brain’s Role in Healing the Body

**Making Room for More:** Creative Writing for Health Professionals

**Applied Drama:** Why Health Needs Some Drama

**Healing through Poetry:** in a Writing Group

**The Role of Visual Literacy in Development of Reflective Healthcare Providers**

**Music Therapy and Whole-Person Care**

To find out more, contact: Gilbrea Centre for Studies in Aging McMaster University
1280 Main St West, KTH 226
Hamilton, ON L8S 1M5
F: 905.525.4198
T: 905.525.9140 ext.24449
E: gilbrea@mcmaster.ca

**News from Hematology**

**Changes to selection of Red Cell Concentrates for Sickle Cell Disease Patients**

Effective **February 17, 2015** changes in practice have occurred in Transfusion Medicine for our Sickle Cell Disease (SCD) patient population. With the following changes, we are now meeting best practice clinical guidelines and implementing changes that enhance patient safety and quality of care.

1. SCD patients will be fully phenotyped and genotyped for red blood cell antigens.

2. Transfusion Medicine will be a participant in the Canadian Blood Services Sickle Registry.

3. All Red Cell Concentrates (RCCs) issued for transfusion for SCD patients will be Hb S negative.

4. SCD patients with alloantibodies will receive full phenotyped-matched RCCs (Rh, K, Fya, Jka, Jkb, S and s)

SCD patients without history of alloantibodies will continue to receive RCCs that are phenotype-matched for Rh and K.

What does this mean for clinicians?

1. When sending a Group and Screen for the first time on a SCD patient new to HHS or SJH, please ensure the Transfusion Medicine laboratory is notified that this is a SCD patient by phoning the Transfusion Medicine Laboratory and/or by entering “Sickle Cell Disease” in the order comment field.

2. When a SCD patient requires RCCs urgently before phenotypically matched, and/or HbS negative, and/or ≤14 day old RCC units can be provided, the Hematologist on-call at that site will be contacted by Transfusion Medicine Technologists. The Hematologist will make the clinical decision to wait or to transfuse with the RCCs that are immediately available.

If you have any questions about this change in practice please contact Madeleine Verhovsek (verhovm@mcmaster.ca) or Allahna Elahie (elahie@hhsc.ca or extension 73732).

**News from LIS**

Effective April 2, 2015, **Lesley Roik** has accepted a Technical Specialist position within the Laboratory Information Systems (LIS) Department. Lesley’s personality, skills, background, and valuable experience in the Microbiology department make her a fitting addition to the LIS Team. Lesley will be actively involved in supporting the LIS team with our growing list of HRLMP LIS duties and LHIN Projects and initiatives.

Please join us in welcoming Lesley to her new role within the HRLMP.

**Karon Taggart**, Manager LIS

**News from Microbiology**

Effective **Monday, May 4, 2015**, the Microbiology Laboratory will be changing our test method for detecting *Streptococcus pyogenes* (Group A
Streptococcus) from throat swabs, from bacterial culture to Loop-mediated isothermal Amplification (LAMP) detection. This new molecular method has a sensitivity of 98% and specificity 99% compared to repeated culture, and provides results in less than one hour, versus 16-24 hours for culture.

The order codes for this test have NOT changed; however, there are several changes that you should be aware of:

1) Positive LAMP results will be reported as: “Streptococcus pyogenes (Group A) detected. This isolate is predictably susceptible to penicillin and ampicillin.”
2) Culture and susceptibility testing will not be performed routinely on LAMP positive specimens as S. pyogenes (group A) is predictably susceptible to penicillin. If susceptibility testing is required (e.g. penicillin allergy) please call the Virology Molecular Microbiology lab at 905-522-1155 ext 33708.
3) Occasionally, S. pyogenes detected by LAMP testing will not grow in culture, and in these cases susceptibility testing will not be possible.

Dr. Christine Lee

After almost 10 years of innovative thinking, hard work, and diligence, Dr. Christine Lee has announced that she will be ending her term as the Discipline Director for Microbiology.

Dr. Lee has shown strong leadership through the consolidation of all Microbiology services within the HRLMP. She guided us through the introduction of automation and has worked tirelessly to ensure that our laboratory has been able to develop and implement new molecular tests to benefit patient care.

Dr. Lee will continue to work as a microbiologist with the HRLMP and will now have more time to dedicate to her productive clinical and research career, where she is a leader in the field of Clostridium difficile research.

The microbiology program is very grateful to Dr. Lee for all of her leadership during her two terms as our discipline director. She has agreed to continue on in this role until a new director is found.

Dr. C. Main, Editor of Connections
Medical Microbiologist, HRLMP

News from Pathology

It is an exciting time in pathology with a relatively large number of staffing changes.

We are sad to say goodbye to Dr. X. Fang (of St. Josephs and Juravinski hospital sites) who has accepted a position at the Brantford General Hospital. Dr. Lydia Vincic our regional (and amazing) expert in lung/thoracic pathology at St. Joseph’s Hospital is retiring. Additionally, Dr. Odashiro, a wonderful addition to our team has decided to go back to Quebec to work.

We have been very fortunate to introduce some great new people to our department:

- Dr Radenka Bozanovic, one of our own residents, has been hired fulltime to work at the MUMC site doing Pediatric pathology.
- Dr Sarab Mohamed, a resident from Newfoundland, who briefly worked here as an observer before beginning her career in pathology, will also be joining the pediatric team at MUMC doing pediatric Pathology,
under the guidance of Dr. J. Arredondo.

- **Dr Amir Salehi**, another new graduate with a fellowship in oncologic pathology with an interest in gynecologic pathology and breast pathology will also be joining us.

- **Dr Houman Nafisi** will also be joining us, with an interest and previous training in breast pathology.

- **Dr Rebekah Jacques** - a new graduate in forensic pathology will be a welcome addition to the team at the forensic unit at the Hamilton General Hospital.

**Dr. C. Ross**, Editorial Board Member, Connections

**Remembering Rhonda Birse**

It is with heavy hearts that we announce the passing of Rhonda Birse after a courageous battle with breast cancer.

Rhonda was an integral and cherished member of the HRLMP team. She began her career as a Cytotechnologist in 1986, and then became a teaching technologist in Cytopathology in 2001. From 2007 to 2009, Rhonda was the Education Specialist for the HRLMP during which time she developed our on-line Laboratory Test Information Guide and was instrumental in the implementation of safety occurrence reporting and e-learning systems for the laboratory program. Rhonda was also a key contributor to the Quality Resource Team in preparation for accreditation assessments. Rhonda left the HRLMP in 2009, and returned in 2012 as the Supervisor of the Core Laboratory at the McMaster site. In 2013, she became the Manager of the Core Laboratories at both McMaster and Juravinski sites. Rhonda’s passion for laboratory medicine and patient safety were evidenced in everything she did and every challenge she faced, from the day-to-day operations of the laboratory to special projects.

Rhonda touched the lives of everyone she worked with. Kind and caring, generous and thoughtful, one of Rhonda’s strengths was building relationships and lasting friendships with both her colleagues and her staff. Her bravery and strength throughout her battle with breast cancer were both admirable and inspirational. Her positive attitude never wavered.

Rhonda’s legacy will live on in many ways, one of them being the “Right Path” team in the Bright Run, an annual 5km run/walk in support of breast cancer research. This year’s Bright Run is on September 12th, 2015. Rhonda would be proud to know that the Right Path team will continue on, inspired by her strength and courage. You can find out more about the Bright Run at [http://www.brightrun.ca/](http://www.brightrun.ca/).

**Andrea Tjahja**, Education, Safety, Transport and Communications manager, HRLMP.

Rest in peace, Rhonda.

There will be a Celebration of Life Service for Rhonda Birse on Saturday April 25th from 1-4pm at the Holiday Inn in Burlington.

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**Bright Run**

- **Walk. Run. Support**
- **Saturday September 12 2015**

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