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### *Snapshot of this edition:*

- **The Return of Plagues**
- **Education News:** *Rapid Fire Showcase* – Saturday October 15, 2022
- **Quality News:** AC-D Surveillance Visit – Tentatively end of November 2022

## The Return of Plagues

The explosive worldwide spread of viral infections like SARS-CoV-2 (the coronavirus which causes COVID-19), Ebola, HIV, Swine flu—and now Monkeypox – are all recent examples of “zoonoses”, or infections which made a jump from animals to humans. Zoonoses occur all the time, but generally cause only a limited number of human infections. Yet, these five infections have all resulted in large outbreaks or pandemics of major public health importance. These seem to come out of nowhere and cause hospitalizations and deaths, massively disrupting our health care systems, laboratories, and society. We fear getting infected through work, travel, and basic human interactions. Have we returned to an age of plagues?

These examples are all viral infections, and three of these—COVID-19, HIV and influenza—rank amongst the seven deadliest plagues in history. However, the deadliest pandemics were bacterial—specifically, *Yersinia pestis*, which caused the “Black Plague” that decimated Eurasia and Africa in the 1300s, and caused at least two other major pandemics in history. *Y. pestis* is a biosafety level 3 organism, and while the HRLMP bacteriology laboratory at the Hamilton General Hospital site is able to grow these bacteria, they require heightened biosafety measures and are immediately sent to the Public Health Laboratory in Toronto if *Y. pestis* is suspected.

The HRLMP Virology and Molecular Laboratory at St. Joseph’s Healthcare Hamilton, in collaboration with the Research Institute at St. Joe’s Hamilton, has played a major role in the development and

implementation of tests for SARS-CoV-2, Influenza, and other respiratory viruses. The laboratory provides instructions and test kits for appropriate collection of specimens for Ebola and related hemorrhagic fevers, and provides HIV serological testing.

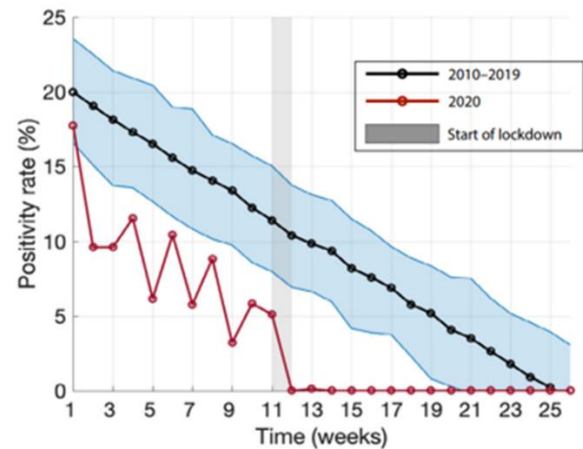
What about Monkeypox? This painful but rarely fatal disease has rapidly spread around the world. In a matter of just a few short months, the Monkeypox Virus testing landscape has evolved and improved significantly in Ontario. Early on, suspected Monkeypox specimens required specific collection containers, specialized and stringent transport conditions, and all testing was performed at the National Microbiology Laboratory (NML) in Winnipeg. Public Health Ontario (PHO) then rapidly developed and validated a Monkeypox PCR assay which has been live since June 23, 2022. This testing, now performed in Toronto, with its rapid, less than 24-hour turn-around-time, has led to timely diagnosis and isolation of patients, critical to limiting the spread of the virus. Currently, hospital-based laboratories such as HRLMP are not licensed to perform Monkeypox Virus PCR, but this may become useful in future.

The COVID-19 technical testing group, a network of microbiologists and laboratory scientists from across Ontario, who have been meeting weekly over the past 2.5 years, urgently collaborated and shared their experiences and data, leading to a streamlined set of guiding principles around Monkeypox testing. The closer inter-laboratory collaboration is one of the positive changes which have emerged as a result of the COVID-19 pandemic.

Currently, testing for Monkeypox is performed at PHO, mainly on lesion swabs collected in McMaster Molecular Media (or other viral transport media) and occasionally on NPS (Nasopharyngeal swabs), throat, or rectal swabs in cases where there is no rash but a strong exposure history or contact. Testing is also available on blood samples for patients with severe illness. As of August 22, a total of 583 confirmed cases have been diagnosed in

Ontario, with 13 of these cases (2.2%) within the City of Hamilton Public Health Services health unit.

While the emergence of new pandemics is unpredictable, the return of seasonal diseases such as Influenza is expected. In 2020, we documented the rapid disappearance of Influenza and other respiratory viruses in Hamilton within a week of our provincial lock-down (see figure). A moderate-to-severe Influenza season is likely this fall and winter, given the low immunity in children in the past three years. As HRLMP microbiologist Dr. Mark Loeb demonstrated in a landmark study, vaccination of children against Influenza prevented disease in the entire community.



**Figure:** Rapid disappearance of influenza in Hamilton in 2020, compared with 10 previous seasons. The red curve shows the positivity rate of influenza A and B for 2020, with the shaded grey bar indicating the start of the COVID-19 lockdown.

Influenza and other respiratory viruses will return this fall, and the HRLMP has excellent multiplex respiratory PCR to facilitate timely diagnosis and appropriate infection control. More ominously, the resurgence of vaccine preventable diseases such as measles and polio may herald an era of increased need for surveillance and containment of infections that were on the verge of eradication.

As with COVID-19, we have excellent tools for controlling these diseases—we have vaccines

for prevention and outbreak control, laboratory tests for timely identification, and therapies for COVID-19, HIV, or influenza with proven efficacy. The laboratory is pivotal to surveillance, early diagnosis, and control of these infections.

Submitted by:

**Dr. Marek Smieja**, Medical Microbiologist

**Dr. Daniela Leto**, Medical Microbiologist

### References:

1. History's Seven Deadliest Plagues. Gavi, the Vaccine Alliance.  
<https://www.gavi.org/vaccineswork/historys-seven-deadliest-plagues>
2. COVID-19: A year later: Rapid disappearance of influenza following the implementation of COVID-19 mitigation measures in Hamilton, Ontario - PMC (nih.gov).  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8127684/>
3. Mark Loeb et al. Effect of influenza vaccination of children on infection rates in Hutterite communities: a randomized trial. JAMA 2010 Mar 10;303(10):943-50.  
<https://jamanetwork.com/journals/jama/fullarticle/185509>

### News from Administration



### Appointment of Dr. Josko Ivica, Clinical Chemist, HRLMP

We are very pleased to announce the appointment of **Dr. Josko Ivica** to the full-time position of

**Clinical Chemist** in the Division of Clinical Chemistry/Immunology, effective August 1, 2022.

Dr. Ivica joined the HRLMP on a part-time basis in 2021 and has worked alongside Drs. Chetty, Macri, Khan, and Potter focusing on validation, repatriation of testing, and quality improvement initiatives. In this full-time role, Dr. Ivica will continue his work within the Core and CC/I Laboratories, primarily at the General Site.

Dr. Ivica obtained his PhD in Biochemistry and Pathobiology at the School of Medicine, Charles University, Prague, Czech Republic. He subsequently completed his Fellowship Training in Clinical Chemistry at McMaster University. He has a special interest in Mass Spectrometry and HPLC-based assays.

Please join us in welcoming Dr. Ivica to this full-time position and in wishing him much success and happiness in this role.

**Dr. Menaka Pai**, Chief, Laboratory Medicine, Hamilton Health Sciences and St. Joseph's Healthcare

**Dr. Joe Macri**, Discipline Director, CC/I, HRLMP

**Dr. Tony Chetty**, Former Discipline Director, CC/I, HRLMP

### Manager, Transfusion Medicine

I am pleased to communicate the successful candidate for this position as **Adriana Sferrazza**.

Adriana has been providing support as Interim Manager, Transfusion Medicine since January 2022, and has been employed with HRLMP since 2015. With experience in both Transfusion Medicine and Stem Cell Processing, her previous experience includes the role of Technical Specialist and Transfusion Safety Officer in 2020. She is currently instrumental in guiding TM through the implementation of EPIC and Wellsky/Beaker.

In addition to the certification required for the position, Adriana retains further education toward

Leadership, Laboratory Quality LEAN training, and is an MBA candidate at the University of Fredericton in the specialty stream of Innovation Leadership.

Please join me in congratulating Adriana on her new position!

**Sandra Fazari**

Interim Executive Director, HRLMP

### Appointment of Dr. Ashish Rajput, Hematopathologist

I am very pleased to announce that **Dr. Ashish Rajput** has accepted my offer to join the HRLMP as a Hematopathologist. Dr. Rajput will join the hematopathology team at the Juravinski Hospital on September 1, 2022.

Dr. Rajput's work experience includes benign and malignant hematology, flow cytometry, and lymph node/lymphoma tissue diagnosis. He comes to us with several years' experience in hematopathology at Eastern Health, St. John's, Newfoundland; The Moncton Hospital, New Brunswick; and in Burnaby, British Columbia. He has authored a number of academic publications and is excited to contribute to McMaster University's hematopathology teaching programs.

Dr. Rajput completed fellowship training in hematopathology through the University of Ottawa followed by a lymphoma fellowship through the University of Alberta. He has also completed a two-year CIHR Clinician/Scientist training program in Molecular Pathology.

Please join me in welcoming Dr. Rajput and in wishing him much success and happiness in this new position.

**Dr. Menaka Pai**, Chief of Laboratory Medicine, Hamilton Health Sciences and St. Joseph's Healthcare Hamilton,  
Medical Director, Hamilton Regional Laboratory Medicine Program

## Education News



### 2022 Rapid Fire Showcase

The **2022 HRLMP Rapid Fire Showcase** will take place on **Saturday, October 15<sup>th</sup>, 2022** and will be **virtual** again this year.

This is a great opportunity for obtaining continuing education hours and showcasing our program.

**Call for speakers:** If you or your laboratory would like to present an interesting case, new technology, or a cool project this year please email [HRLMPQuality@hpsc.ca](mailto:HRLMPQuality@hpsc.ca) to secure your spot.

More information and registration details to follow.



### Save the Date: Lab Week 2023

The countdown is on! **National Medical Laboratory Week 2023 is April 9-15**. We'll be celebrating all things lab through the week and joining the international festivities for International Biomedical Laboratory Science Day on April 15.

## News from Chemistry



September 22 – 23, 2022



Join our Local Organizing Committee, **Dr. Waliul Khan**, Local Chair, and **Dr. Donglai Ma** and **Dr. Wei Song** for this two day event.

For more information please click on:  
<http://autoantibodynetwork.com/Content/Home.aspx>

To register online by visiting: [chse.mcmaster.ca](http://chse.mcmaster.ca)

**Congratulations** to **Dr. Guillaume Paré** and his team for their numerous recent accomplishments...

**Congratulations** to **Nazia Pathan**, PhD candidate in Dr. Paré's group for being one of four finalists for the best abstract prize at the 2022 International Genetic Epidemiology Society meeting in September. Nazia has developed a novel statistical method to estimate the contribution of rare coding genetic variants to complex traits and diseases. We wish her the best of luck for her presentation.

Also from the Paré laboratory, **Dr. Pedrum Mohammad-Shemirani's** PhD work has been published in the *Journal of the American College of Cardiology*, one of the top journals in the field. His work showed that lipoprotein(a) is a likely, and previously unknown, cause of atrial fibrillation. This provides an opportunity for repurposing the lipoprotein(a) inhibitors currently undergoing phase 3 trials.

The article is **Elevated Lipoprotein(a) and Risk of Atrial Fibrillation: An Observational and Mendelian Randomization Study**.

Mohammadi-Shemirani P, Chong M, Narula S, Perrot N, Conen D, Roberts JD, Thériault S, Bossé Y, Lanktree MB, Pigeysre M, Paré G.  
*J Am Coll Cardiol*. 2022 Apr 26;79(16):1579-1590.  
 doi: 10.1016/j.jacc.2022.02.018.

Finally, Dr. Paré has been invited to chair the session on polygenic risk scores at the upcoming *American Heart Association* annual meeting. Polygenic scores are a novel approach to genetic prediction of disease combining hundreds of thousands of common genetic variants into integrated risk scores. Polygenic risk scores have previously been shown by the Paré group to be on par with classic Mendelian mutations for prediction of heart disease.

Dr. Paré's work has also been noticed by the Karolinska Institute with an invitation to present at their annual *Precision Medicine targeting the Heart and Vessels Symposium* taking place at the Nobel Forum, as well as the NovoNordisk Foundation with an invitation to join as invited faculty at their annual *Precision Medicine Symposium*.



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## Hematology News

CONGRATULATIONS!



Dr. Christine Ribic

**Congratulations to Dr. Christine Ribic** as she was recently successful in her defense and is now a **Fellow of the American College of Histocompatibility and Immunogenetics (ASHI)**.



**Congratulations to Dr. Rahaf Altahan** for being awarded an **ISLH2022 Travel Award** to attend the conference in Bologna, Italy. She will present their abstract titled: *Assessment of reference intervals for platelet aggregation tests on samples with low platelet counts*.

On June 30, 2022 Dr. Altahan completed her one-year Fellowship in Advanced Laboratory Coagulation and Hemostasis under the supervision of Dr. Catherine Hayward.



The **HRLMP** and **McMaster University** were well represented at **ISTH2022**.

**Dr. Catherine Hayward**, Hematologist and Head, Special Coagulation, HRLMP, was one of the triad of speakers for the **Uri Seligsohn State-of-the-Art Lecture** on rare bleeding disorders at the **ISTH2022**. She spoke on "*Hemostatic defects in fibrinolytic disorders*".

In addition, she held a Master Class on bleeding with normal laboratory results.

Illustrated capsules for the SOA lectures are published now in open access:

<https://onlinelibrary.wiley.com/doi/full/10.1002/rth2.12747>

The ISTH has published new guidelines for the antithrombotic treatment of COVID-19.

### New ISTH COVID-19 Guidelines Now Available

Monday, July 18, 2022



Watch **Dr. Sam Schulman** describe these new guidelines here: [2022.isthcongressdaily.org/Articles/ArtMI...](https://2022.isthcongressdaily.org/Articles/ArtMI...)  
[pic.twitter.com/f24qaAiatu](https://pic.twitter.com/f24qaAiatu)

Planning is well underway for **ISTH2023** – which is being held in **Montreal, Quebec**.



ISTH2023 Planning Committee



Dr. S. Schulman



Dr. J. Weitz



Dr. I. Nazy

## Quality News

### Students

HRLMP looks forward to welcoming our next group of students in September 2022 from The Michener Institute, St. Clair College and Ontario Tech University. Regardless of staffing challenges, HRLMP continues to create a meaningful, positive learning environment for students wishing to work in Hamilton.

### 2021 Quality Report

Earlier this year, the HRLMP Quality Team compiled the first annual Quality Report. This report was a collaborative effort by the Quality Department, Quality Council, Quality Leads and the Discipline Specific Quality Teams across our Program. The teams spent several months taking stock of the current state of our Quality Management System and collecting data to measure our successes and our improvement opportunities. The Annual Quality Report summarizes all of that information and is a reflection of the incredible work that each member of the HRLMP does every day.

The 2021 Quality Report will be uploaded into Paradigm and all staff will receive an action item. We hope that you will take a few moments to review the contents of this report and appreciate the high quality of work that is being done across our Program.

The past few years have been challenging, but HRLMP staff have consistently shown that they are resilient in the face of adversity and are focused on providing exceptional patient care. Thank you!

### Fall Audit and Inspection Season

Preparations have begun for the upcoming Accreditation Canada Diagnostics (AC-D) Surveillance visit which is tentatively scheduled for the end of November. The HRLMP has been diligently preparing with the focused Equipment Audit and the focused Document Audit. Your

## News from Pathology



### Royal College 2023 Exam Board Appointment

**Dr. Tariq Aziz** has accepted the position of *Chair & English Reviewer* for the **Royal College General Pathology Exam Board** for the term July 1, 2022 to December 31, 2023.

**Congratulations!**



Quality Leads and Quality Teams have been reviewing the Quality System Essentials which have also been sent out to all HRLMP staff.

In addition to the AC-D visit, some laboratories and divisions will have additional inspections. Microbiology will be visited by the Ministry of Labour and Public Health Agency of Canada, and Stem Cell will be visited by Canadian Blood Services and Health Canada.

From participating in internal focused audits to completing your action items, we thank all staff who are working hard to achieve conformance and to showcase the amazing work that HRLMP does for our patients.

Submitted by: **the HRLMP Quality Team**

## Choosing Wisely Canada

### FEATURES Using Labs Wisely

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“Lab testing is the single highest volume medical activity. While many of these tests provide diagnostic insights important to patient care, not all tests are needed. Low-value lab tests unnecessarily consume health care resources and lead to false positives, unnecessary follow-ups and potential harm for patients. ... ..

.... .... The laboratory team has minimal influence on the number of tests ordered and collections/tubes required, and staffing shortages have affected the ability of lab teams to respond to materials shortages, said Dr. Simons. Clinical teams, she said, have a large impact, but often little understanding of how their ordering practices affect the lab and the use of laboratory resources.”

Click below to read the full article:  
<https://dialogue.cpsso.on.ca/2022/06/using-labs-wisely/>

