

## ANNUAL REPORT April 2024 to March 2025

Innovation • Education • Quality • Assessment • Continual Improvement





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## **Canadian Microbiology Proficiency Testing Program (CMPT)**

## - Established 1982 -

# ISO/IEC 17043:2023 Accredited (A2LA) Initial Registration 2015



Certificate no. 3749.01

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#### I. QUALITY POLICY

CMPT is an international, university based, peer- directed program that provides innovative External Quality Assessment (EQA) services for diagnostic microbiology laboratories and health care settings implementing point of care testing for infectious diseases.

#### **Our Values:**

- Innovation
- Education
- Quality Assessment
- Continual Improvement

#### **Our Commitments:**

- CMPT is committed to Quality by maintaining its internal Quality Management System in line
  with ISO/IEC 17043: 2023Conformity assessment General requirements for the competence
  of proficiency testing providers. CMPT commits to ongoing internal and external review for
  continual improvement and submitting to external audits by an ILAC accredited organization on
  an annual review basis.
- **CMPT** is **committed to our customers** by providing our customers in the medical and environmental health sectors with our very best products and services, we in turn help them to provide quality services and information related to patient care and treatment as well as public health and safety.
- **CMPT** is committed to our community. Our vision is to be recognized provincially, nationally, and internationally as a quality partner for microbiology laboratories and to locations providing point of care diagnostic services for infectious disease diagnosis and treatment. CMPT is a advocate for continued quality improvement in healthcare and public health.
- **CMPT is committed to our employees** by recognizing their value and importance to the organization including maintaining positive relationships with all our collaborators, customers and stakeholders.

#### II. STAFF (Alphabetical order)

Chuanbin Dai, MSc	Technologist
Manoj Dangi MSc	Technologist
Peter Davoust, BSc	Marketing and Communications Assistant
Esther Kwok, BSc, RT, CLQM	Program Coordinator
Caleb Lee, MHA, BMLSc, CLQM	Senior Technologist
Anna Malikovskaia, BMLSc	Technologist
Lucy A. Perrone, MSPH, PhD	Chair and Managing Director
Veronica Restelli, MSc	Education Coordinator
Sakina Sadki, MBA	Administrative Assistant
Ellie Wong, MLT	Technologist

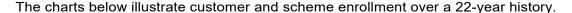
#### III. CHAIR'S REPORT

#### I. ORGANIZATIONAL PERFORMANCE

Created in 1982, CMPT is a not for profit, fee for service program within the UBC academic environment practicing its values of Innovation, Education, Quality Assessment and Continual Improvement. For over 40 years, CMPT has been formulating clinically and environmentally relevant proficiency testing (PT) challenges for microbiology laboratories, and pivoting to meet their needs when diagnostic methods change. CMPT continues to support the diagnostic medicine community towards improved patient and public health and safety, and as CMPT's customers change as point of care testing expands into nontraditional laboratory settings.

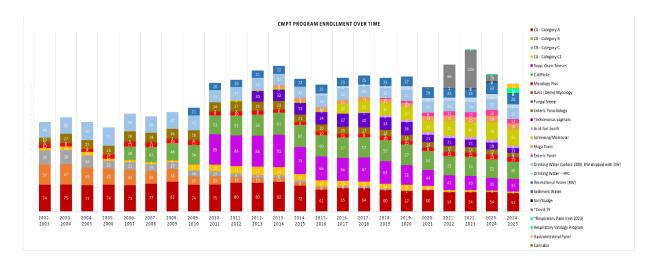
CMPT operates at UBC because of the collaboration of many laboratories, practitioners, governments and quality partners that support the mission of the organization. CMPT remains a small organization by full time employee size (6 FTE at the time of writing) and by customer base by comparison to other PT providers globally. CMPT's operational model was built on partnerships and volunteer service and remains reliant on its partnerships for the sharing of clinical specimens and in-kind consultative service donated by more than 25 expert practitioners in the field of clinical and environmental microbiology. CMPT's 4 expert technical committees meet regularly throughout the year to develop the PT challenges, review participant results and to discuss important relevant matters in the field of diagnostic microbiology.

In program year 2024-25 CMPT enrolled 356 participants across 20 PT schemes. This includes subscribers from 5 countries outside of Canada. CMPT also prepares samples for 3 other PT providers which currently accounts for approximately 40% of CMPT's total revenue.





Of the 20 schemes offered in 2024-25 10 experienced a decline in enrollment, 9 remained unchanged and 1 scheme grew in participation. As a result, CMPT incurred a structural deficit however financial reserves were utilized to cover the shortfall. Cost saving measures have been put in place since 2024 in order to preserve remaining financial reserves and efforts are underway to grow scheme enrollment and expand PT sample provision contracts to international PT providers.



CMPT has been responding to declining revenue through the development of new schemes that could drive value for our customers.

Over the past 5 years CMPT has invested in expanding PT services offering 16 schemes in 2019 to now 20 schemes in 2024-25.

In 2024 CMPT launched a new gastrointestinal panel (GIP) for multiplex molecular investigations of infectious diarrhea and enrolled 13 laboratories. The new GIP includes 14 unique organism targets including viruses' bacteria and parasites, and now supports critical quality assurance of this new diagnostic test across BC and Canada. CMPT needs to reevaluate the cost-benefit of maintaining failing schemes from a financial perspective.

Without dedicated funding to support PT sample innovation for interested parties, CMPT is limited in its financial ability and timelines to invest in new research and development. However, despite the challenges, a new sexually transmitted infections (STI) syndromic panel is planned for launch in 2025-26 and experiments to improve sample stability and safety through pathogen inactivation and lyophilization have been underway throughout 2025. The innovation in sample formulation and stability is intended to retain and attract participants.

Procuring PT samples from another provider and offering them as a supplier is within our role as an ISO 17043;2023 accredited EQA provider, however those supplier-distributor relationships need to be pursued and secured.

Despite these challenges, CMPT has stayed true to its values and continues to maintain its UBC Hospital based level-2 microbiology laboratory facility and the EQA organization under prestigious international accreditation to ISO/IEC 17043:2023 by A2LA.

#### II. ADMINISTRATION AND OPERATIONS

CMPTs sustainability relies on our customers interest and feedback in our products services.

The Department of Pathology and Laboratory Medicine provides resources and personnel to support CMPT's finance, human resources, and administrative needs. UBC's Faculty of Medicine Finance Department and the Department of Pathology and Laboratory Medicine are responsible for approving budgets for CMPT, including approvals for new staffing.

CMPT is thankful to everyone involved in making the organization what it has come to be today and what it will be tomorrow.

CMPT's success relies on committed effort at every level of the organization. CMPT is grateful to UBC for the supportive facilities, department leadership, laboratory and administrative staff, committee members, our medical advisory board and all of partners who provide critical advocacy, support and collaboration that keep CMPT relevant and visible in Canada.

#### **Staff and Technical Committees**

This year CMPT welcomed Chuanbin Dai and Manoj Dangi as full-time staff and said goodbye to Peter Davoust, Caleb Lee, Ellie Wong, Anna Malikovskaia.

CMPT's value of providing life-like simulated samples puts a heavy demand on CMPT staff time for the manual production of PT samples. Adding more schemes where samples are produced inside the CMPT lab facility is not feasible without recruiting more technologist staff. Several other admin support staff have been added on a part-time basis to address workload issues. Hiring is approved by the Faculty of Medicine's Finance Department.

CMPT is grateful for all the support we receive from our committee members and committee chairs. CMPT has technical expert committees for each of our main programs: Clinical Bacteriology, Mycology, Enteric Parasitology, and Clinical Virology, and we also receive valuable guidance from our Water Program chair. Without volunteers, it would be impossible for CMPT to sustain our organism challenge selection process, complete our rigorous evaluation system, maintain the high quality of our critiques, and newsletter. CMPT recognizes the valuable role that our committee members contribute, all is appreciated.

## **Space and Safety**

At the current production workload, CMPT is provided adequate laboratory space by the Department of Pathology and Laboratory Medicine at the UBC Hospital in the Koerner Pavilion. However, should orders for samples increase additional and/or renovated laboratory space will be essential for meeting those deliverables. In these cases, the renovation and optimization of the sample production facility room will be required as well as the addition of office space for staff.

CMPT's level 2 laboratory is regularly assessed by inspectors and maintains a current UBC biosafety certificate of approval to operate. CMPT's organism library is maintained and updated on a daily basis and updates the UBC biosafety certificate quarterly with this information. CMPT meets UBC biosafety and chemical safety requirements and regularly submits to institutional safety audits as well as external audit review as part of maintaining ISO 17043 accreditation.

#### **Pricing, Supplies and Materials**

Operational costs including supplies and shipping continue to rise. CMPT reviews operational costs routinely and ledger review is conducted every quarter in oversight meetings held with the head of Finance in the Faculty of Medicine. CMPT evaluates scheme pricing on an annual basis and conducts market analysis.

#### III. International visibility- Training, Presentations and Publications

## **Training**

CMPT has been represented in several national and international forums this program year. As the Chair of CMPT, Dr. Perrone promotes CMPT's activities and capabilities throughout her collaborations, publications and speaking engagements. All staff, members, trainees and students are encouraged to conduct research, publish and present their work nationally and internationally. As an organization, CMPT is a non-voting member of the European EQALM and regularly seeks international collaboration opportunities and supports joint publications.

## **International Activities**

CMPT hosted two visiting medical microbiologists form the central public health laboratory in Muscat Oman to train in quality assurance sample production at CMPT in August 2024.

#### **Presentations**

- Methods matter! Investigating clinical microbiology laboratory performance in an external proficiency testing program: A 6-year cross-sectional analysis (2017-2022). \*Jennifer Wu, Md Saiful Alam, Veronica Restelli, Selvarani Vimalanathan, Lucy A. Perrone. CACMID Vancouver, Canada, April 9-12, 2024.
- •Improving drinking water quality through proficiency testing—the impact of testing method and accreditation status on Escherichia coli detection by Canadian environmental testing laboratories. Mahfuza Sreya, Md Saiful Alam, Sahibjot Daula, Caleb Lee, Veronica Restelli, Ken Middlebrook, Michael A. Noble, Lucy A. Perrone. CALA Connects, Vancouver, Canada, May 12, 2024.
- •Modern Management Approaches in Laboratory Medicine, Biomedical Society of Zambia, Annual Conference. Livingstone Zambia. December 9-12, 2024.
- •Role of laboratories in point of care testing under ISO 15189:2022 and role of EQA in testing accuracy. BCSLS, Victoria, Canada. October 3-5, 2024.
- •ISO Quality Standards, Medical Laboratory Week, British Columbia Laboratory Medical Services, April 15, 2024. https://www.youtube.com/watch?v=beXNDy6UQ0w
- •Laboratory Quality Seasonal School 2024, Labvine, South Africa, February 7, 2024.

#### **Publications**

The CMPT organization values knowledge sharing and continual quality improvement. Scholarship remains of high importance for our university- based organization.

CMPT staff and students published the following articles this period:

- \*Wu, J., Alam, M.S., Restelli, V., Vimalanathan, S., Perrone, L.A.. Evaluation of clinical microbiology laboratory performance through participation in an external quality assessment (EQA) program highlights the need for ongoing support regarding antibiotic susceptibility testing and results interpretation.: A 5-year retrospective analysis. J Med Microbiol. 2024 Oct 29;73(10):001915. https://doi.org/10.1099/jmm.0.001915
- Buchta, C., Marrington, R., De la Salle, B. and Albarède, S., Badrick, T., Bullock, D., Cadamuro, J., Delatour, V., Dusinovic, E., Geilenkeuser, WJ., Gidske, G., Griesmacher, A., Haliassos, A., Holzhauser, D., Huggett, J., Karathanos, S., Pezzati, P., Sandberg, S., Sarkar, A., Solsvik, A., Spannagl, M., Thelen, M., Restelli, V., Perrone, L.A.. Behind the Scenes of EQA Characteristics, Capabilities, Benefits and Assets of External Quality Assessment (EQA), Part I EQA in General and EQA Programs in Particular. Clin Chem Lab Med. 2025 Jan 6;63(5):844-858. https://doi.org/10.1515/cclm-2024-1289
- Buchta, C., De la Salle, B., Marrington,R., Almonacid, A.A., Albarède, S., Badrick, T., Bullock, D., Cobbaert, C.M., Coucke, W., Delatour, V., Faria, AP., Geilenkeuser, WJ., Griesmacher, A., Huggett, JF., Kammel, M., Kessler, A., Körmöczi, GF., Meijer,P., Miranda, A., Patel, D., Pezzati, P., Sandberg, S., Schennach, H., Schweiger, CR., Schwenoha, K., Spannagl, M., Sung, H.,Thelen, M., Weykamp, C., Yanovska, V., Zeichhardt, H., Restelli, V., Perrone, L.A.. Behind the scenes of EQA Characteristics, Capabilities, Benefits and Assets of External Quality Assessment (EQA), Part II EQA cycle. Clin Chem Lab Med. vol. 63, no. 5, 2025, pp. 859-867. https://doi.org/10.1515/cclm-2024-1290
- 4. Buchta, C., Marrington, R., De la Salle, B., Albarède, S., Albe, X., Badrick, T., Berghäll, H., Bullock, D., Cobbaert, C.M., Coucke, W., Delatour, Vi., Geilenkeuser, WJ., Griesmacher, A., Henriksen, GM., Huggett, JF., Juhos, I., Kammel, M., Luppa, P.B., Meijer, P. Pelanti, J.,

- Pezzati, P., Sandberg, S., Spannagl, M., Thelen, M., Zeichhardt, H., Restelli, V., **Perrone, L.A.** Behind the scenes of EQA Characteristics, Capabilities, Benefits and Assets of External Quality Assessment (EQA), Part III EQA samples. Clin Chem Lab Med. vol. 63, no. 5, 2025, pp. 868-878. <a href="https://doi.org/10.1515/cclm-2024-1291">https://doi.org/10.1515/cclm-2024-1291</a>
- Buchta, C., De la Salle, B., Marrington, R., Aburto Almonacid, Andrés, Albarède, S., Badrick, T., Bullock, D., Cobbaert, C. M., Coucke, W., Delatour, V., Faria, A.P., Geilenkeuser, W.J., Griesmacher, A., Huggett, J. F., Kammel, M., Kessler, A., Körmöczi, G.F., Meijer, P., Miranda, A., Patel, D., Pezzati, P., Sandberg, S., Schennach, H., Schweiger, C.R., Schwenoha, K., Spannagl, M., Sung, H., Thelen, M., Weykamp, C., Yanovska, V., Zeichhardt, H., Restelli, V., Perrone, L.A.. Behind the scenes of EQA-characteristics, capabilities, benefits and assets of external quality assessment (EQA) Part IV Benefits for participant laboratories. Clin Chem Lab Med. vol. 63, no. 5, 2025, pp. 879-897. https://doi.org/10.1515/cclm-2024-1292
- 6. Buchta, C., De la Salle, B., Marrington, R., Aburto Almonacid, Andrés, Albarède, S., Badrick, T., Bullock, D., Cobbaert, C. M., Coucke, W., Delatour, V., Faria, A.P., Geilenkeuser, W.J., Griesmacher, A., Huggett, J. F., Kammel, M., Kessler, A., Körmöczi, G.F., Meijer, P., Miranda, A., Patel, D., Pezzati, P., Sandberg, S., Schennach, H., Schweiger, C.R., Schwenoha, K., Spannagl, M., Sung, H., Thelen, M., Weykamp, C., Yanovska, V., Zeichhardt, H., Restelli, V., Perrone, L.A.. Behind the scenes of EQA Characteristics, Capabilities, Benefits and Assets of External Quality Assessment (EQA) Part V Benefits for Stakeholders Other than Participants. Clin Chem Lab Med. vol. 63, no. 5, 2025, pp. 898-915. https://doi.org/10.1515/cclm-2024-1293
- Sreya, M., Alam, MD. S., Daula, S., Lee, C., Restelli, V., Middlebrook, K., Noble, M.A., Perrone, L.A.. Participation in a proficiency testing program promotes the quality of drinking-water testing and public safety. Front. Mol. Biosci. 2024. 11:1338549. https://doi.org/10.3389/fmolb.2024.1338549.

#### III. FINANCIAL HEALTH

CMPT relies on the revenues generated through program registration for cost recovery and successfully balanced our budget again this program year. CMPT's costs continue to rise despite declining or flat enrollment in several schemes. Several schemes have experienced rapidly declining enrollment despite the work to maintain and offer them, and CMPT needs to revaluate the cost-benefit of maintaining failing schemes from a financial perspective. CMPT will need to generate new business in 2025/26 in order to stay solvent. Due to declining scheme enrollment and revenue, CMPT's human resources have been reduced and 5 full time staff are currently working. CMPT has approximately \$100,000 in financial reserves.

#### IV. QUALITY MANAGEMENT SYSTEM

#### a. Assessments

Over the years, we have found immense value in organizational decision to seek formal recognition by international certification and accreditation bodies. In addition to the recognition by our peers in the international quality assurance community, it has become a principal factor for national and international laboratories seeking providers for external quality services.

Most importantly, CMPT continues to invest in building the skills of our staff in the areas of quality management, planning and development of customer services and satisfaction.

#### b. Internal Audits

Internal audits were completed February 2025. These audits are done to ensure our compliance with international standards ISO 17043.

The internal audits identified some minor issues that required addressing which were successfully completed on time prior to our external audit in March 2025.

#### c. External Assessment and ISO Accreditation

In March 2025 CMPT was assessed for compliance with the new international standard ISO/ IEC 17043:2023 (Conformity assessment - General requirements for proficiency testing) by the American Association for Laboratory Accreditation (A2LA). A2LA cited no major concerns during their audit or report. Minor concerns were noted, but all have subsequently been addressed, and CMPT's accreditation certificate for 2023-2026 was upheld. CMPT also added to its scope the following program, Gastrointestinal Panel.

CMPT's next ISO/IEC 17043:2023 audit by A2LA will be in March 2026.

#### d. OFI Review for 2024-2025

In 2024, CMPT improved the OFI reporting process by digitalizing the form and extending the classification of OFIs. This improvement has allowed for a more thorough analysis of this particular set and will allow the comparison of OFIs for different periods to monitor trends.

During this 12-month interval, 20 OFIs were recorded. Of the **20** OFIs recorded, **13** were Internal Errors (IE). These are errors associated with sample shipping, processing, or labelling, safety, or documentation; **5** were administrative errors (AE) which include errors in ordering supplies, generation and posting of result letters or final reports, and posting of results. **One** OFIs was the result of Internal Audits in preparation for ISO17043 external audit. These were mainly missing documents which were generated and added to the Quality Manual/Quality Management System. **One** OFI was an external error related to the website host provider

CMPT had **2 recorded** process improvement one of which enhanced the stock check process and a second one directed to improve Soil samples formulation

Most of the IE were related to <u>sample processing and procedures</u>, and included 3 instances of out of target counts in the Water programs, 3 sample contaminations; and 2 organisms that failed to survive for the required time.

One OFI generated from IA in preparation for ISO17043 external audit. The audit revealed 3 non-compliances reflected in 3 OFI already summarized before.

- Underlying causes of many of the OFIs has been expressed as staff overload.
- CMPT has undergone significant staff changes this program year mainly the departure of CMPT's long serving senior technologist followed by two technologists 6 and 7 months later.
- The re-assignment of employees' responsibilities and the prompt hiring and training of new staff allowed for the continuation of CMPT activities and ability to comply with its obligations.
- The biggest impact of OFIs has been on the time staff needs to use to correct or remediate events.
- The impact of contaminated samples or samples that need to be recalled on participants and the perceive value they have of CMPT is difficult to evaluate.

## - Internal Audits findings

Four OFIs generated from internal audit in preparation for ISO17043 external audit, including an OFI for the internal audit, itself. Also included were OFIs for missing pipette calibration records for 2024, a missing statement, and inconsistent traceability of experiment records of one of the challenges. The compliance with the ISO17043 standard has been ratified by an external audit.

#### SUMMARY

Underlying causes of many of the OFIs has been expressed as overwork and busyness. CMPT has undergone staff changes and this could also lead to extra work being laid on senior staff as they train new employees.

## e. Review of Quality Indicators

## • Member Satisfaction Survey

Customer satisfaction is one of CMPT's quality values and key performance indicators.

Every year, CMPT designs and sends out a survey to evaluate the degree of satisfaction of our customers with our products and services.

In order to better align our survey with best practices and to enable better understanding of results, we reformatted our questions into Likert items. While this change makes it difficult to compare data from the 2024-2025 program year with data from years past, this change should create less confusion for participants and allow better data analysis going forward

In January 2025 a general Customer Satisfaction Survey was sent to approximately 150 labs. We received 38 responses (26% response rate).

#### Survey report

#### - Communications

100% of the responses said they were either satisfied or very satisfied with CMPT's communications including phone calls and e-mails.

Very Satisfied	53%
Satisfied	47%
Indifferent	0%
Dissatisfied	0%

## - EQA samples' transport and receiving

98% of the responses were either satisfied or very satisfied, with 56% of respondents reporting they were very satisfied.

Very Satisfied	56%
Satisfied	42%
Indifferent	3%
Dissatisfied	0%

#### EQA sample's construction, appearance, functionality

While the vast majority of respondents were either satisfied or very satisfied with our samples (~80%), about 8% said they were dissatisfied.

Very Satisfied	31%
Satisfied	53%
Indifferent	8%
Dissatisfied	8%

## - CMPT reports, critiques (grading, clarity, fairness)

94% found CMPT's challenge rounds and critiques to be valuable or very valuable, with the remaining 6% indifferent. This is a point of pride for CMPT, as education is part of our mission.

Very Valuable	34%
Valuable	60%
Indifferent	6%

## - Value of CMPT's paper and video challenges

CMPT introduced the Paper Challenge (PC) and Video Challenge (VC) as PT tools to further evaluate the extra-analytical phase. These challenges are created through a process that involves the selection of a topic, the description of a scenario, the design of possible answers, and the selection of the best response and unacceptable ones.

These challenges are only sent to participants in our Clinical Bacteriology programs and thus, other participants do not receive them. It is important to note though, that extra analytical errors occur in all industries, and in the case of the clinical laboratory, they constitute up to 95% of the total number of errors.

54% of respondents found paper and video challenges to be either valuable or very valuable.

Very Valuable	20%
Valuable	34%
Indifferent	34%
Not very valuable	9%
Not helpful at all	3%

#### - Professional Development course

The professional development (PD) course has been offered free of charge to staff participating in any of CPMT's programs since 2026 and it has been awarded CPE and PHE hours by CSMLS. 14% of respondents have taken the PD course, up from 4% last year. 31% were not aware of the PD course, which is down from 68% last year. Of those who did take it, 80% found it valuable or very valuable. Of those who did not take it, 40% felt they didn't have time.

Very Valuable	20%
Valuable	60%
Indifferent	20%

#### - CMPT's newsletter

73% of respondents who knew about the CMPT newsletter said it was either valuable or very valuable. 19% of total respondents were not aware that CMPT had a newsletter.

Very valuable	13
Valuable	32
Indifferent	23
Didn't know CMPT had a newsletter	32

CMPT's newsletter underwent a major overhaul in Spring and Summer of 2023 with the support of Marketing and Communications assistant Peter Davoust, and is now being sent to subscribers via email as an e-newsletter. We expect this change to increase our readership and bring this valuable resource to our participants and potential customers.

CMPT is also committed to publishing articles and peer reviewed publications.

## Fully ungraded samples

CMPT considers fully ungraded challenges (UC) a quality indicator as they reflect quality issues in the manufacturing of the sample challenges.

The number of completely UC has been recorded since 2001. From 2001 until 2022, only clinical bacteriology challenges were considered and the analysis did not include Paper challenges (PC) or Video challenges (VC). In 2022, we started to count ungraded challenges in all of our PT programs and included PC/VC in the clinical bacteriology program

The following is the analysis of the completely UC.

## - Historic number of ungraded challenges (2010 - 2024)

Year	# ungraded challenges	Comments
2010	0	
2011	0	
2012	3	
2013	0	Only CB challenges considered
2014	0	PC/VC not included
2015	0	
2016	0	
2017	0	
2018	1	
2019	2	
2020	0	
2021	1	Includes all PT programs and PC/VC
2022	4	and FO/VO
2023	8	
2024	8	

## - Analysis of ungraded challenges in 2024-2025

There were 8 completely ungraded challenges in 2024, historic high which must be addressed.

## Clinical bacteriology UC (4):

- Two UC were anaerobes (Clostridium perfringens and Fusobacterium necrophorum). These organisms did not have enough stability (viability) in the samples sent to laboratories.
- The other two UC were paper challenges.

#### Enteric parasitology UC (1):

 The UC was a sample with Cyclospora cayetanensis; no consensus was reached amongst the participants.

## **Enteric panel UC (1):**

The sample sent to participants was cross contaminated

## Gastrointestinal panel UC (2)

One of the samples contained *C. cayetanensis* and the other one *E. histolytica*. Participants using other platform than Biofire did not detect either of the organisms.

## • Appeals Resolution

CMPT takes our customer feedback seriously. If any of our participants consider the grading unfair for any given challenge, they are entitled to appeal their grade.

In the program year 2024-25 (May to March), CMPT had no requests for appeals for the originally assigned grade.

## V. STRATEGIC GOALS AND OBJECTIVES

CMPT staff and leadership meet annually in June to review the year prior, and to set goals and priorities for the year ahead. A two-day strategic work planning retreat for CMPT full time staff has been held every year since 2022. By recording and declaring our goals and objectives, we ensure our commitment to follow-through.

## i. Goals and Objectives 2023-24

Nurture existing programs to increase enrollment and revenue	Ongoing
CMPT- Leverage existing EQA programs to grow into new areas     -New tripartite STI scheme     -Explore lyophilization formulation     -Expand inactivation methods for POC customers, new schemes	Ongoing, some completed
Support professional development for staff	Ongoing
4. Increase CMPT program visibility -publications -conference attendance/presentation -international collaborations -CMPT e-newsletter -Departmental emails, news -LinkedIn social media	Ongoing
5. CMPT- Improve internal management and technical processes  -Better monitoring of non-conformities/OFIs  -Better monitoring of costs of error (e.g. repeated production, sample reshipments)  -Complete space optimization and move  -optimize formulations (e.g inactivation methods)  -improve sample stability (e.g. water samples)	Ongoing, some completed

## ii. Goals and Objectives for 2024-2025

1. Increase program efficiencies to reduce labor costs and increase revenue  - complete gross revenue analysis of all PT schemes to determine what programs perform well and which do not  -cut programs that are not financially sustainable  - promote expanded enrollment of existing EQA schemes with existing customers including supplier relationships  -with new Tecnologist-5 hire, explore the growth of CMPT's standards business, conduct market analysis, feasibility research  -change program frequency for several schemes in order to reduce labor costs  - automate result letter generation in order to reduce labor time and improve traceability  -relegate paper challenges to optional (no fee) for 2025 in Clinical Bacteriology	Ongoing, some completed
Leverage existing EQA programs to grow into new areas     -new STI panel (requires chlamydia samples/ culture)     - new enteric panel- add enteric viruses Norovirus and rotavirus, add parasites     -Expand the Strep A scheme	Ongoing, some completed
Support professional development for staff     -promote cross training and new skills development     -support staff leadership of projects and initiatives     -support staff publications and conference attendance	Ongoing
4. Maintain program visibility -publications -conference attendance/presentation -international collaborations - e-newsletter -departmental emails, news -Linked In social media -establish an annual marketing budget -expand TC membership and recruit new Clinical Bacteriology chair	Active
5. Improve internal management and technical processes -better monitoring of non-conformities/OFIs and completion of root cause analysis -better monitoring of costs of error (e.g. repeated production, sample reshipments) -complete space optimization, freezer logs, and equipment -characterize the organism library- UBC Science Co Op student -optimize formulations (e.g. AFB slides- clumping an issue) -improve sample stability (e.g. water, cannabis samples)	Ongoing, some completed
6. International EQA training -promote CMPT in global networks (e.g. WHO AMR exchange, LinkedIn)	Active

CMPT has great potential as a leader in clinical microbiology quality assurance and education however the ongoing threats due to declining program enrollment should be a wakeup call to the organization.

Our people make the program, and our members illuminate the path.

## Thank you to everyone at CMPT for everything you do to support this international program.

Sincerely, Lucy A. Perrone, MSPH, PhD Associate Professor, Pathology and Laboratory Medicine, UBC Chair, CMPT

## IV. COMMITTEE MEMBERS 2024-2025

Committee members volunteer their time and are essential for selecting challenges, assessing results, and producing the critiques. The efforts contributed by each committee member are critical to the function of CMPT and are very much appreciated.

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## V. PROFICIENCY TESTING SCHEMES AND RESULTS FOR PROGRAM YEAR 2024-25

The changing landscape of medical laboratories in terms of size, number, and activity has stimulated us to seek opportunities in EQA innovation, to which we have responded with increased variety of samples and programs. We continue to extend research and development for new assays with the view to improve products and extend the variety of clinically relevant challenges in addition to our current programs.

CMPT also has a PT program for water testing laboratories which provides samples for about 50 laboratories across Canada. Samples are provided for laboratories that work with Membrane Filtration, Presence-Absence, Enzyme Substrate, and Most Probable Water methods. We also provide samples for another Canadian PT program focused on water testing laboratories.

A summary of our programs for 2024-2025 is detailed below.

#### NOTE:

#### Interpreting the histograms (see below)

All histograms portray the total percent achievable score. For each laboratory, the sum of all challenges performed and graded was calculated, either as a total for all challenges, or within a specific category, such as "bacterial identification". The total achievable score, which is the score the laboratory *would have obtained* if they received a grade of 4/4 for each graded challenge was calculated. Challenges that are ungraded get excluded from the analysis. For this program year, there were no ungraded challenges. The percent achievable score gets calculated as: (total achieved score/total achievable score) X100.

The number of laboratories achieving a specific grade is indicated by the height of the columns over the Percent Achievable Score, and is read on the LEFT side scale of the chart.

The Cumulative Scoring is indicated by the connected box-line that starts low on the left and rises to the right, and is read on the Right-side scale of the chart. The cumulative column indicates the percentage of laboratories that received an acceptable grade on the challenge.

## A. CLINICAL BACTERIOLOGY PROGRAM

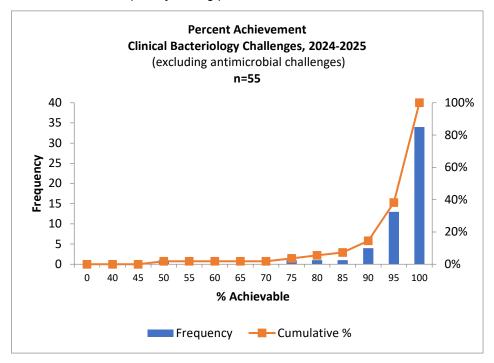
Clinical bacteriology surveys are shipped 4 times per year. Each survey can consist in up to seven different types of samples depending on the category of the laboratory and the challenges to which they are subscribed. This includes paper and video challenges, blood cultures, Gram staining and bacterial identification.

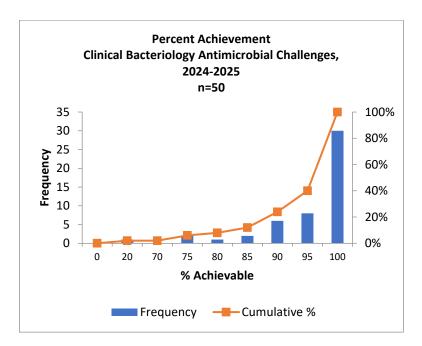
The following graphs show the relative success of the participants' performance this program year. An additional histogram is included for susceptibility testing performance where appropriate.

Survey	Challenge	Sample	History	Organism or Report
•	G241	Gram smear – Sputum (companion to M241-3)	75 year old male exacerbation of COPD (chronic obstructive pulmonary disease)	4+ (>10/oif) neutrophils/WBC 4+ (>50/oif) gram negative coccobacilli (Haemophilus influenzae) 3+ 11-50/oif) gram positive cocci (Streptococcus viridans)
M241	M241-1	Midstream Urine sample	80 year old female with dysuria	≥100 x 10 <sup>6</sup> cfu/L Escherichia coli Proteus mirabilis
shipped	M241-2	Vitreous Eye Fluid Aspirate	35 year old male, in- patient, with leukemia	Candida albicans
May 6, 2024	M241-3	Sputum sample (companion to G241)	75 year old male exacerbation of COPD	Haemophilus influenzae
	M241-4	Leg Wound swab	23 year old in-patient, car crash victim	Clostridium perfringens
	M241-5	Blood Culture sample	35 year old female, in- patient, with a PICC line	Staphylococcus lugdunensis - AST
	PC241	Paper challenge	see description at member.cmpt.ca	Е
	G242	Gram smear – Joint Fluid (companion to M232-5)	40 year old male traveler	3+ (6-10/oif) neutrophils 3+ (11-50/oif) gram negative diplococci ( <i>Neisseria gonorrhoeae</i> )
	M242-1	Throat swab	14 year old female with rash and sore throat	Arcanobacterium haemolyticum
	M242-2	Ear swab	65 year old diabetic with ear redness and pain	Pseudomonas aeruginosa - AST
	M242-3	Stool sample	62 year old male, returning from vacation	Shigella sonnei
M242 shipped	M242-4	Peritoneal Fluid sample	53 year old surgical patient admitted with perforation	Escherichia coli (ESBL) - AST Klebsiella pneumoniae - AST
August 12, 2024	M242-5	Joint Fluid sample (companion to G242)	40 year old male traveler	Neisseria gonorrhoeae
2024	GS242-1	Gram Smear - Cerebrospinal Fluid	19 year old military recruit	4+ (>10/oif) neutrophils 4+ (>50/oif) gram negative diplococci ( <i>Neisseria</i> species)
	GS242-2	Gram Smear - Joint Fluid sample	27 year old post shoulder surgery	4+ (>10/oif) neutrophils 4+ (>50/oif) gram positive bacilli ( <i>Cutibacterium acnes</i> )
	PC242	Paper challenge	see description at member.cmpt.ca	A

Survey	Challenge	Sample	History	Organism or Report
M243	G243	Gram Smear - Brain Abscess smear (companion to M243- 4)	55 year old male in- patient with ataxia	4+ (>10/oif) neutrophils/WBC 4+ (>50/oif) gram positive cocci (Streptococcus anginosus)
shipped November	M243-1	Midstream Urine sample	24 year old female with dysuria	≥100 x 10 <sup>6</sup> cfu/L Staphylococcus saphrophyticus
6, 2024	M243-2	Eye swab	6 month old with sticky eye	Neisseria meningitidis
	M243-3	Sputum sample	65 year old ICU patient with pneumonia	Pasteurella multocida - AST
	M243-4	Brain Abscess sample (companion to G243)	55 year old male inpatient with ataxia	Streptococcus anginosus - AST
	M243-5	Blood Culture sample	70 year old patient on dialysis	Candida parapsilosis
	PC243	Paper challenge	see description at member.cmpt.ca	C, D, E
	G244	Gram Smear – Neck Abscess (companion to M244-5)	20 year old in-patient with swollen neck	4+ (>10/oif) neutrophils/WBC 4+ (>50/oif) gram negative bacilli (Fusobacterium necrophorum)
	M244-1	Throat swab	10 year old with a sore throat	no group A, C, G Streptococcus or Arcanobacterium haemolyticum esepresent
	M244-2	Eye swab	39 year old stone worker with a painful eye	Bacillus cereus
M244	M244-3	Stool sample Public Health Notification	44 year old pig farmer with diarrhea	Yersinia enterocolitica yes
shipped February 3, 2025	M244-4	Cerebrospinal Fluid sample	1 year old with decreased level of consciousness	Streptococcus pneumoniae - AST
2020	M244-5	Neck Abscess swab (companion to G244)	20 year old in-patient with swollen neck	Fusobacterium necrophorum
	GS244-1	Joint Fluid smear	32 year old athlete with knee trauma	3+ (6-10/oif) neutrophils/WBC 3+ (11-50/oif) gram positive bacilli (C.perfringens 4+ (>50/oif) gram negative bacilli (E.coli)
	GS244-2	Cerebrospinal Fluid smear	8 year old with no history of vaccination	3+ (6-10/oif) neutrophils/WBC 4+ (>50/oif) gram negative coccbacil (H.influenzae)
	PC244	Paper challenge	see description at member.cmpt.ca	A or E

The following graphs show the relative success of the participants' performance this program year. An additional histogram is included for susceptibility testing performance.





**Summary of results:** A total of 55 labs participated in the program with 51/55 labs performing at ≥90%. Two labs achieved 80 to 85%, 1 lab achieved 75% and 1 lab achieved 50%. Fifty labs performed and reported antibiotic susceptibility testing with 44/50 achieving ≥90%, 3 labs achieving 80-85%, 2 labs achieving 75% and one lab achieving 20%.

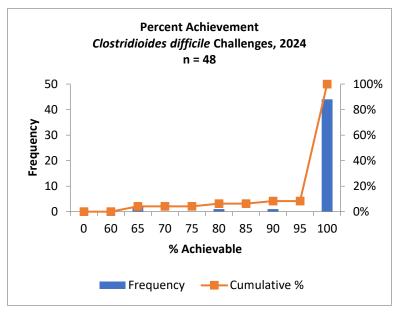
## **B. CLOSTRIDIOIDES DIFFICILE PROGRAM**

In May 2016, the *Clostridioides difficile* program was reorganized as a standalone program and graded separately from the Clinical Bacteriology program. The program consisted of 2 samples, shipped twice a year. Program participants report the presence or absence of a toxin gene and/or toxin antigen. Notification to the infection control department was also considered for grading, where applicable.

Table 2 illustrates the challenges shipped in 2024 and the results. In May 2024, sample C had been sent to all participants as a replacement for sample CT2305-B, which had been contaminated.

Challenge/ Sample	Antigen/Toxin or Toxin gene	Acceptable	Unacceptable	Ungraded
	positive/positive	41		
A	not tested/positive	5		
	no report/no report		2	
	positive/positive	41		
В	not tested /positive	5		
	no report/no report		2	
	negative/negative	40		
С	not tested /negative	6		
	no report/no report		2	
	positive/positive	42		
A	not tested/positive	5		
	no report/no report		1	
	negative/negative	40		
В	not tested/negative	6		
	negative/not tested	1		
	no report/no report		1	0
	Sample A  B	A positive/positive not tested/positive no report/no report  B positive/positive no report/no report  no report/no report  negative/negative no report/no report  no report/no report  A positive/positive no report/no report  positive/positive no report/no report  not tested/positive no report/no report  not tested/positive no report/no report  negative/negative no report/no report  negative/negative negative/not tested	Positive/positive	Positive/positive   41

The histogram illustrates the participants' performance in 2024.



**Summary of results**: A total of 48 labs participated this year with 44/48 achieving 100%, one lab achieved between 87.5%, 1 lab achieved 80% and two labs achieved 62.5%.

#### C. WATER MICROBIOLOGY PROGRAM

Drinking Water challenge surveys are shipped to laboratories three times per year. Each survey consists of sets of 4 drinking water samples. Starting in 2015, the Heterotrophic Plate Count program was offered to laboratories that tested drinking water samples with this method. Recreational Water challenge surveys are shipped two times per year. Each survey consists of one set of recreational water samples (spa water, freshwater beach or marine water). Participants participate in one, two or all the recreational challenge samples.

Not all laboratories perform all challenges and not all laboratories use the same methods when testing water samples. Laboratories perform testing use one to four methods depending on the laboratory's accreditation criteria. Laboratories also perform the Presence/Absence method, as their primary method or in addition to other methods. The drinking water bacteriology (membrane filtration, Enzyme Substrate, MPN and Presence/Absence methods) challenge records for 2024 are shown in Table 3, Heterotrophic Plate Count program records are shown in Table 4, and the recreational water challenge records are shown in Table 5.

Table	Table 3: 2024 Drinking Water Bacteriology challenge record								
Date	Sample	Sample Organiam		Membrane Filtration mean/median/MU% cfu/100 ml		Enzyme Substrate mean/median MPN/100 ml		MPN mean/median MPN/100 ml	
Date	No.	Organism	Total Coliforms	E.coli	Total Coliform s	E.coli	Total Coliform s	E.coli	Total Coliforms/ <i>E.coli</i>
	1	no organisms present	0/0/0.0	0/0/0.0	0/0	0/0	0/0	0/0	A/A
W241 April 8,	2	Escherichia coli	42/43/18.4	41/41/17. 6	44.3/45.0	41.8/40.2	≥23/≥23	≥23/≥23	P/P
2024	3	Enterobacte r species	74/73/20.5	0/0/0.0	78.8/81.0	0/0	≥23/≥23	0/0	PA
	4	Escherichia coli	67/67/18.5	66/67/16. 0	74.5/77.6	73.7/73.3	≥23/≥23	≥23/≥23	P/P
	1	Escherichia coli	63/67/19.0	64/66/19. 0	64.6/63.7	63.4/62.7	≥23/≥23	≥23/≥23	P/P
W242 July 22,	2	Escherichia coli	29/28/24.7	29/27/25. 4	32.7/32.7	32.5/32.7	≥23/≥23	≥23/≥23	P/P
2024	3	Enterobacte r species	21/19/29.3	0/0/0.0	24.8/24.6	0/0/0.0	≥23/≥23	0/0/0.0	P/A
	4	Enterobacte r species	55/53/19.3	0/0/0.0	60.2/60.5	0/0/0.0	≥23/≥23	0/0/0.0	P/A
	1	Enterobacte r species	35/33/27.9	0/0/0.0	36.7/35.0	0/0/0.0	≥23/≥23	0/0/0.0	P/A
W243 October	2	no organisms present	0/0/0.0	0/0/0.0	0/0/0.0	0/0/0.0	0/0/0.0	0/0/0.0	A/A
28, 2024	3	Escherichia coli	63/66/24.3	60/58/22. 6	68.9/65.0	68.8/65.0	≥23/≥23	≥23/≥23	P/P
	4	Escherichia coli	65/64/20.5	63/63/19. 5	73.4/72.0	73.3/72.0	≥23/≥23	≥23/≥23	P/P

Date	Sample No.	Organism	mean/median (cfu/ml)/MU%
	1	no organisms present	0/0/0
H241	2	Enterobacter species	119/122/17.6
April 8, 2024	3	Escherichia coli	216/224/10.1
	4	Escherichia coli	65/65/11.8
H242 July 22,2024	1	Enterobacter species	61/59/25.9
	2	Escherichia coli	267/261/30.0
	3	Enterobacter species	61/60/21.1
	4	Escherichia coli	310/340/27.1
	1	Escherichia coli	84/82/18.7
H243	2	no organisms present	0/0/0
October 28, 2024	3	Escherichia coli	146/145/17.1
	4	Enterobacter species	198/196/19.1

Table 5: 2024 Recreational Water Bacteriology challenge record						
				mean/median/MU%		
Date	Sample no.	Source	Challenge	Membrane Filtration cfu/100mL	Enzyme Substrate MPN/100 ml	
R241	1	Spa Water	Pseudomonas aeruginosa	0/0/0.0	0.0/0.0	
April 8,	2	Freshwater Beach	Escherichia coli	118/112/17.2	113.6/109.0	
2024	3	Marine Water	Enterococcus species	145/150/15.8	129.7/124	
	1A	Spa Water, A	Pseudomonas aeruginosa	188/174/34.9	198.9/209.0	
R242	1B	Spa Water, B	Pseudomonas aeruginosa	90/83/31.1	95.7/89.1	
August 19, 2024	2	Freshwater Beach	Escherichia coli	376/380/20.8	436.4/443.8	
	3	Marine Water	Enterococcus species	89/88/15.1	83.6/86.0	

R242-1B, Spa Water sample was optional and was a compensatory sample for M241-1. MU% - not applicable for EST, MPN or PA methods

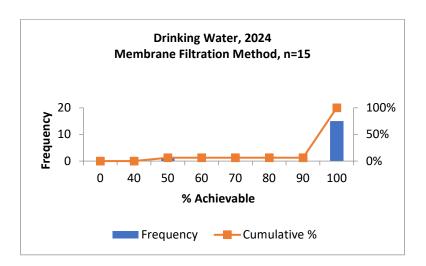
## Water Bacteriology (Drinking and Environmental Water Sample) Score

Laboratory testing results are graded based on the Membrane Filtration, Enzyme Substrate, MPN, Heterotrophic Plate Count (HPC) and/or Presence/Absence methods. All methods are graded on a point scale for assessment of water samples with the exception of the Presence/Absence method, a qualitative method and is graded qualitatively. With 12 drinking water samples tested for the program year, the maximum score is 36.

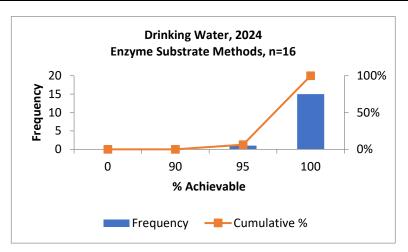
With 3 environmental water samples per survey, laboratories can receive up to a maximum annual total of 18. However, on August 19, 2024, CMPT shipped an additional spa water sample, B, as compensation for participants who were concerned with the absence of *Pseudomonas* species in R241-1. As a result, the 2024 annual environmental maximum total was 21.

The following Score Tables illustrate the % Achievable scores for methods used for Drinking Water samples during 2024.

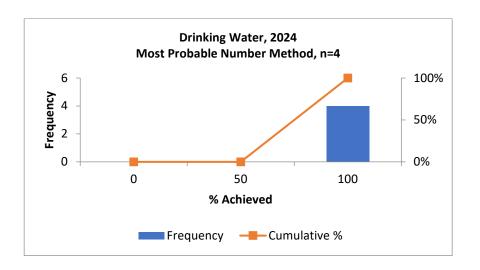
Drinking Water Performance Table for the Membrane Filtration method, 2024					
Achievable	Labs (n=15)	Cumulative %			
42	1	6.25			
100	14	100			



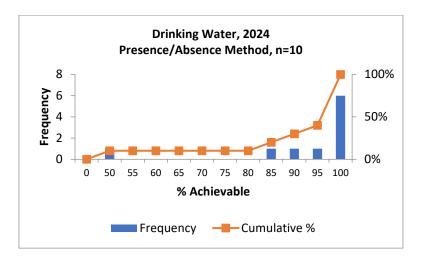
Drinking Water Performance Table for Enzyme Substrate methods, 2024						
Achievable	Labs (n=16)	Cumulative %				
95	1	6.25				
100	15	100.00				



Drinking Water Performance Table for Most Probable Number (MPN) method, 2024					
Achievable	Labs (n=4)	Cumulative %			
100	4	100.00			

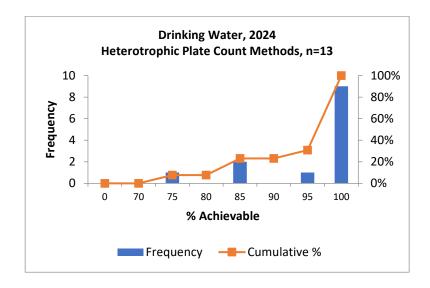


Drinking Water Performance Table for Presence/Absence methods, 2024						
Achievable	Labs (n=10)	Cumulative %				
50	1	10.00				
85	1	20.00				
90	1	30.00				
95	1	40.00				
100	6	100.00				



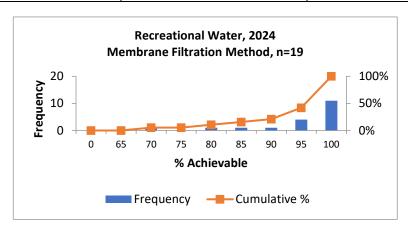
The following Table illustrates the % Achievable scores for the Heterotrophic Plate Count method used for Drinking Water samples during 2024.

Drinking Water Performance Table for Heterotrophic Plate Count method Table, 2024							
Achievable	Labs (n=13)	Cumulative %					
75	1	7.69					
85	2	23.08					
95	1	30.77					
100	9	100.00					

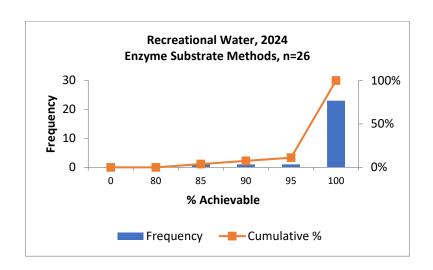


The following Score Tables illustrate the Achievable scores for Membrane Filtration and Enzyme Substrate methods used for Recreational Water samples during 2024.

Recreational Water Performance Table for the Membrane Filtration method, 2024							
Achievable	Achievable Labs (n=19) Cumulative %						
70	1	5.26					
80	1	10.53					
85	1	15.79					
90	1	21.05					
95	4	42.11					
100	11	100.00					



Recreational Water Performance Table for the Enzyme Substrate method, 2024								
Achievable	Achievable Labs (n=26) Cumulative %							
85	1	3.70						
90	1	7.41						
95	1	11.11						
100	23	100.00						



## D. MYCOLOGY PROGRAM

The Mycology Plus Program was introduced in June 2001. Participants receive 3 shipments per year, each including 3 fungal smear slides for direct examination and 3 proficiency challenges for the identification of dermatophytes, molds, common laboratory contaminants, and yeasts. In 2016-2017, the expert committee decided to start grading mycology challenges. Grading is on a two-point scale, acceptable or unacceptable. Susceptibility challenges for yeasts were introduced in 2008 and laboratories performing anti-fungal testing were encouraged to report their results.

0	0				Grades		
Survey	Samples	Α	U	UG			
		Α	negative	14	1	1	
MY2304	Fungal Smear (hyphae)	В	positive	14	1	1	
	(, [)	С	negative	14	1	1	
April 2, 2024	Yeast	1	Nakaseomyces (Candida) glabrata	12		1	
	Dermatophyte	2	Microsporum audouinii	10	1	2	
	Mold	3	Alternaria species	10	1	2	
		Α	negative	15		1	
MY2408	Fungal Smear (hyphae)	В	positive	15		1	
August 6,	(Hyphao)	С	positive	15		1	
2024	Yeast	1	Saccharomyces cerevisiae	10		2	
	Dermatophyte	2	Trichophyton verrucossum	9	1	2	
	Mold	3	Aspergillus nidulans	9	1	2	
	F 1 0	Α	negative	14		1	
NNO 444	Fungal Smear (hyphae)	В	negative	14		1	
MY2411	()	С	positive	13	1	1	
November	Yeast	1	Candida parapsilosis	10		2	
25, 2024	Dermatophyte	2	Trichosporon tonsurans	10		2	
	Mold	3	Scopulariopsis brevicaulis	10		2	
			Totals	218	8	26	

A - Acceptable U - Unacceptable UG - ungraded

**Summary of results:** Overall, labs performed well this year with an acceptable rate of 87%; there was a 10% of ungraded responses and 3% of incorrect results.

Fully ungraded challenges: 0

## **E. ENTERIC PARASITOLOGY PROGRAM**

Enteric parasitology samples are actual clinical samples fixed in formalin solution. Participants receive 3 surveys per year. Each survey consists of 3 SAF preserved samples that are suitable for concentration techniques and smear preparation; Grading is assessed on the combined results of the stained smear and the concentrate and is based on a 2 point scale (acceptable or unacceptable). Table 7 lists the samples and grades received for the 2024 challenges.

Table 7. Ent	eric Parasito	ology Challenges 2024			
Date	Sample	Parasite(s)	<b>A</b> *	U*	UG*
	PA2404-1	no ova or parasites	8	1	
April 15, 2024	PA2404-2	Hymenolepis nana, Blastocystis species	9		
	PA2404-3	Entamoeba histolytica/dispar, Blastocystis species, Chilomastix mesnili, Iodamoeba bütschlii	9		
	PA2407-1	Ascaris species	8		
July 8, 2024	PA2407-2	Cyclospora cayetanensis, Entamoeba coli Entamoeba hartmanni			8
	PA2407-3	no ova or parasites	8		
	PA2410-1	Giardia lamblia, Blastocystis species	8		
October 1, 2024	PA2410-2	no ova or parasites	8		
	PA2410-3	Blastocystis species	8		
		Total	66	1	8

<sup>\*</sup>Grades: A: acceptable; U: unacceptable; UG: ungraded

**Summary of results:** Overall, labs participating in this program performed very well this year with a 88% of acceptable results, 1% of incorrect/unacceptable results and 11% of ungraded results. As with all our programs, laboratories that did not perform well were consulted about their results.

No. of completely ungraded challenges: 1

## F. TRICHOMONAS VAGINALIS PROGRAM

CMPT launched the *Trichomonas vaginalis* program with the first shipment on August 8, 2011. The program consisted of 2 surveys in 2011. Since 2012, the number of surveys has increased to 3. Each survey consists of 4 samples that are suitable for antigen or DNA testing. Grading is based on a 2-point scale (acceptable or unacceptable). Table 8 lists the samples and grades received for the 2024 challenges.

Table 8. Tric	Table 8. Trichomonas vaginalis Challenges 2024							
Date	Sample	Results	Acceptable	Unacceptable	Ungraded			
	TR2404-1	negative	13					
April 11,	TR2404-2	positive	13					
2024	TR2404-3	positive	13					
	TR2404-4	positive	13					
	TR2407-1	negative	12					
July 8,	TR2407-2	positive	12					
2024	TR2407-3	positive	12					
	TR2407-4	negative	12					
	TR2410-1	positive	12	1				
October 1,	TR2410-2	negative	12	1				
2024	TR2410-3	positive	12	1				
	TR2410-4	negative	12	1				
		Total	148	4	0			

**Summary of results:** Overall, labs participating in this program performed excellently this year with all labs receiving acceptable scores, and only one had unacceptable results.

## **G. SHIGA TOXIN PROGRAM**

CMPT launched the Shiga Toxin Program with the first shipment on May 7, 2012. Participants receive 2 surveys a year with each survey consisting of 3 simulated stool samples. Grading is based on a 2 point scale (acceptable or unacceptable). Table 9 lists the samples and grades received for the 2024 challenges.

Table 9. Shiga Toxin Challenges 2024							
Date	Sample	Results	Acceptable	Unacceptable			
	ST2405-1	gene and toxin negative	17				
May 6, 2024	ST2405-2	gene and toxin positive	17				
	ST2405-3	gene and toxin positive	17				
	ST2411-1	gene and toxin positive	16				
November 4, 2024	ST2411-2	gene and toxin positive	16				
-	ST2411-3	gene and toxin positive	16				
		Total	99	0			

**Summary of results:** Overall, labs participating in this program performed excellently this year with all labs receiving acceptable scores. No labs had unacceptable results.

## H. SCREENING AND MOLECULAR TESTING PROGRAM

CMPT launched the Molecular Proficiency Testing Program with the first shipment on March 23, 2009. The program consists of 2 surveys. With each survey participants receive 4 samples for methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* species (VRE), and group B *Streptococcus* (GBS) each. In 2019, CMPT expanded the Molecular Proficiency Testing Program to include carbapenem-resistant Enterobacterales (CRE). In August 2023, CMPT added group A *Streptococcus* to the program scope. Because all of the samples can also be tested using screening methods, such as chromogenic media, the program was renamed the "Screening and Molecular" Program. Laboratories can participate in one, some, or all of the 4 sample types.

Grading is based on a 2-point scale (acceptable or unacceptable). Table 10 lists the samples and grades received for the 2024 challenges.

Table 10. S	creening and M	olecul	ar Challenges 2024			
Date	Sample		Results	Acceptable	Unacceptable	Ungraded
		1	positive	35		1
	MRSA	2	negative	35		1
	NIKSA	3	positive	35		1
		4	negative	33	2	1
		1	negative	32		
	VRE	2	positive	29	1	2
	VKE	3	positive	30		2
		4	negative	32		
SM2404	GBS	1	negative	34	1	
Anril 22		2	negative	35		
April 22, 2023	GBS	3	positive	35		
		4	positive	35		
		1	negative	26		
	CRE	2	negative	26		
	CKE	3	negative	26		
		4	positive	25	1	
		1	positive	13		
	GAS	2	positive	13		
	GAG	3	negative	11	2	
		4	negative	12	1	
			Total	552	8	8

Table 10. Scr	Table 10. Screening and Molecular Challenges 2024 cont.						
Date	Sample		Results	Acceptable	Unacceptable	Ungraded	
		1	negative	36			
	MRSA	2	negative	36			
	IVIKSA	3	positive	36			
		4	positive	36			
		1	positive	24	7	1	
	VRE	2	positive	30		2	
	VKE	3	negative	32			
		4	negative	32			
		1	positive	35			
SM2408	CBS	2	negative	35			
August 26, 2024	GBS	3	positive	34		1	
2024		4	positive	34		1	
		1	negative	26			
	CRE	2	positive	24	1	1	
	CKE	3	positive	26			
		4	positive	26			
		1	negative	11		1	
	GAS	2	negative	11		1	
	GAS	3	positive	11		1	
		4	positive	11		1	
			Total	546	8	10	
			Year Total	1,098	16	18	

Summary of results: Overall, labs participating in the molecular and screening program performed well, 97%, with a total of 1,132 test events completed. The number of unacceptable results this year was 16 compared to 2023-2024's total of 9. The number of ungraded challenges decreased to 18 from the previous year's total of 35. As with all our programs, laboratories that did not perform well or had questions were consulted about their results.

## I. ACID FAST BACILLI PROGRAM

CMPT launched the Acid-Fast Bacilli Program on April 10, 2017. Participants receive 3 surveys a year, each survey consisting of 3 simulated smears for acid-fast staining and interpretation. Grading is based on a 2-point scale (acceptable or unacceptable). Table 11 lists the samples and grades received for the 2024 challenges.

Table 11. Acid Fast Bacilli Challenges 2024							
Date	Sample	Results	Acceptable	Unacceptable	Ungraded		
	AFB2404-1	positive	8				
April 15, 2024	AFB2404-2	negative	8				
	AFB2404-3	negative	8				
	AFB2407-1	positive	7				
July 8, 2024	AFB2407-2	positive	7				
	AFB2407-3	negative	7				
	AFB2410-1	negative	7				
October 1, 2024	AFB2410-2	positive	7				
	AFB2410-3	positive	7				
		Total	66	0	0		

**Summary of results:** Overall, the number of labs participating in this program performed very well this year with no unacceptable grades.

## J. ENTERIC PANEL PROGRAM

CMPT launched the Enteric Panel Program with the first shipment on April 23, 2018. Participants receive 2 surveys per year; each survey consisting of 4 simulated stool samples for the detection of enteric pathogens by molecular methods. Grading is based on a 2-point scale (acceptable or unacceptable). Table 12 lists the samples and grades received for the 2024 challenges. The number of subscribers to this program increased this year.

Table 12.	Table 12. Enteric Panel Challenges 2024							
Date	Sample	Results	Acceptable	Unacceptable	Ungraded			
	EP2404-1	Salmonella enterica	12					
April	EP2404-2	no pathogens	12					
22, 2024	EP2404-3	Yersinia enterocolitica	10	1	1			
	EP2404-4	non- enterotoxigenic Escherichia coli	12					
	EP2408-1	E. coli	8		4			
	EP2408-2	Yersinia enterocolitica	9	2	1			
August 26, 2024	EP2408-3	Vibrio vulnificus - contaminated with Yersinia and Campylobacter species			12			
	EP2408-4	Campylobacter jejuni	10	1	1			
		Total	73	4	19			

**Summary of results:** Overall the labs participating in this program performed well this year.

Fully ungraded challenges: 1

## K. RESPIRATORY PANEL (VIROLOGY) PROGRAM

CMPT launched the SARS-CoV-2 (Covid-19) program with the first shipment in February 2021. In April 2023, CMPT launched the Respiratory Panel program, which included RSV, influenza A and B, and in combination with the Covid-19 program. Participants received 3 surveys per year with each survey consisting of 4 viral types of simulated nasopharyngeal samples. There were 3 types of samples for each virus, with the exception of Covid-19 with 4. Grading is based on a 2-point scale (acceptable or unacceptable). Table 13 lists the samples and grades received for the 2024 challenges.

Table 13. Resp	iratory Panel C	hallenges 20	24			
Date	Virus	Sample	Results	Α	UA	UG
	RSV	1	positive	8	2	
		2	negative	10		
	RSV2404	3	positive	10		
	Influenza A	1	positive	11		
		2	positive	11		
	IA2404	3	negative	11		
shipped April 9, 2024	Influenza B	1	positive	11		
		2	positive	11		
	IB2404	3	negative	11		
		1	positive	14		
	Covid-19	2	positive	14		
	CO2404	3	negative	13		1
		4	positive	14		
	RSV	1	negative	9		
	RSV2407	2	positive	6		3
		3	positive	6		3
	Influenza A	1	positive	10		
		2	negative	7		3
	IA2407	3	positive	7		3
shipped July 29, 2024	Influenza B	1	positive	10		
• ,		2	negative	7		3
	IB2407	3	positive	7		3
		1	positive	13		1
	Covid-19	2	positive	13		1
	CO2407	3	positive	10		4
		4	negative	10		4

Table 13. Respiratory Panel Challenges 2024 continued									
Date	Virus	Sample	Results	Α	UA	UG			
	RSV RSV2411	1	positive	7					
		2	negative	4		3			
		3	negative	4		3			
	Influenza A	1	negative	8					
		2	positive	5		3			
shipped		3	positive	5		3			
November 25, 2024	Influenza B	1	negative	8					
	IB2411	2	positive	5		3			
		3	positive	5		3			
		1	negative	11					
	Covid-19 CO2411	2	positive	11					
		3	positive	8		3			
		4	positive	8		3			
	353	2	53						

**Summary of results:** Overall, labs participating in this program performed well this year with 353/355 labs (99%) receiving acceptable scores.

## L. SOIL/SEDIMENT PROGRAM

The Soil/Sediment PT program consists of simulated soil sample for the detection, enumeration, and identification of soil contaminant organisms mainly *Salmonella* species.

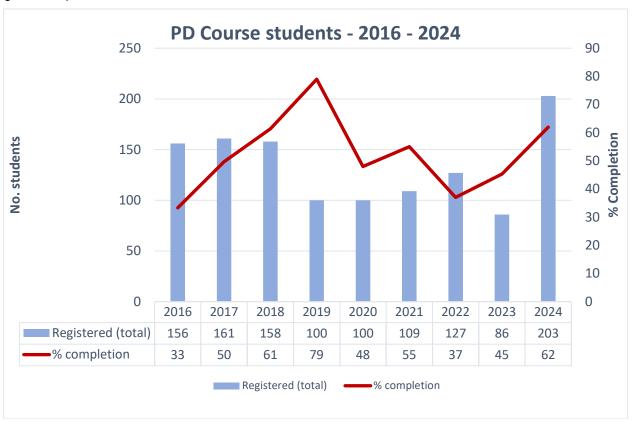
The samples are suitable for the enumeration of *Salmonella* species (Quantitative methods) or Presence / Absence methods. Table 14 lists the samples and grades received for the 2024 challenges.

Table 14. Soil/Sediment Challenges 2024										
Date	Sample	Salmonella species	Acceptable	Unacceptable	Ungraded					
April 22, 2024	SS2404-1	Present	1	0	0					
	SS2404-2	Present	1	0	0					
September 23, 2024	SS2409-1	Present (89 cfu/g)	1	0	0					
	SS2409-2	Present (156 cfu/g)	1	0	0					

## VI. EDUCATION PROGRAMS

CMPT started offering its Professional Development Course in 2016. We consider the CMPT Professional Development Course an education tool for all laboratory personnel Through this course, laboratory technologists can learn relevant and practical information about different clinical microbiology scenarios through the reading of the challenge critiques and completing online quizzes.

Since the course started, the course has had an average of 133 registered participants representing almost all Canadian provinces and territories. 2024 saw the most registered students to date and one of the highest completion rates.



 $\textbf{Figure 1.} \ \ \text{Number of students registered per year and \% completion (at least one of the disciplines) since the PD course started$ 

In average, 62% of the students successfully completed all requirements for at least one of the 3 disciplines (Clinical Bacteriology, Mycology, or Enteric Parasitology). This allowed students to claim continuing education credits.

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CMPT participates with the following organizations to provide EQA challenges and assistance for water bacteriology.

- Enhanced Water Quality Assurance (British Columbia Water Bacteriology Approval Committee)
- BCCDC Environmental Microbiology Laboratory
- British Columbia Ministry of the Environment

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CMPT has technical expert committees for each of our main programs: Clinical Bacteriology, Virology Mycology, Enteric Parasitology, and Clinical Virology programs, and receive valuable guidance from our Water Program chair.

**END OF REPORT**