



## **ANNUAL REPORT 2017 - 2018**

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Innovation • Education • Quality • Assessment • Continual Improvement

# Clinical Microbiology Proficiency Testing

— Established 1982 —

**Michael A Noble MD FRCPC, Chair and Managing Director**  
**Esther Kwok BSc, RT, CLQM, Coordinator**

**ISO 9001:2015 Registration 2002**

**ISO/IEC 17043:2010 Registration 2015**

**ISO 9001:2015**

**ISO/IEC 17043:2010**



ISO 9001



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## CMPT QUALITY POLICY AND MISSION STATEMENT

### Innovation, Education, Quality Assessment, Continual Improvement

- We, at CMPT, are a university based, peer directed program, that provides Innovative External Quality Assessment for microbiology laboratories providing services for public and patient health.
- Our vision is to be recognized provincially, nationally, and internationally as a valued contributor of EQA innovation, education, and as passionate advocates for continued quality improvement in EQA for the benefit of healthcare, our participants, and our program.
- CMPT is committed to its Quality Management System, and regular review for continual improvement of its effectiveness.
- CMPT is committed to regulatory requirements of ISO 9001:2015 and ISO/IEC17043:2010.
- The CMPT Quality Policy is the framework for the regular establishment and review of quality objectives.
- CMPT is committed to regular review of the Quality Policy to ensure its suitability to the program.



Michael A. Noble, Chair  
September 2018

## CMPT STAFF

The CMPT staff is committed to the highest standards of quality and professionalism. This dedicated team of administrative and technical staff provides support through all phases of the program.

**Michael A. Noble**, MD FRCPC .....Chair and Managing Director  
**Esther Kwok**, BSc, RT, CLQM .....Coordinator  
**Caleb Lee**, MHA, BMLSc, CLQM .....Head Technologist  
**Veronica Restelli**, MSc .....Editor  
**Fion Sze On Yung**, MLT BSc .....Technologist

As a program in the Department of Pathology and Laboratory Medicine, University of British Columbia, CMPT acknowledges and greatly appreciates the on-going support of the following individuals.

**Mike Allard**, MD, FRCPC, Professor and Acting Department Head.

**Aileen To**, Director, Human Resources and Administration.

## CHAIRMAN'S ANNUAL REPORT

### CMPT Program

First created in 1983, UBC's Clinical Microbiology Proficiency Testing program has enjoyed over 30 years of experience and expertise while consistently living its mission statement of Innovation, Education, Quality Assessment and Continual Improvement. This past year (April 2017-March 2018) CMPT continued in this long standing tradition. We again have the opportunity to look back with pride in our successes.

### CMPT Staff

As the chair and managing director of CMPT, I am so impressed with the skill, talent and effort of our staff. CMPT exists and is able to shine because of the strength of our collective team. That stability have provided the foundation for our strength and collaborative function and purpose. CMPT is a sum greater than its parts because of the commitment to our program of Esther Kwok, our coordinator, Caleb Lee, our senior technologist, Veronica Restelli, our web manager and editor and now safety officer, and Fion Yung, our research technologist. Our team has worked together for a long time,

### CMPT Volunteers

CMPT is grateful for all the support we receive from our committee members and Chairs. Without the committee members, it would be impossible for us to maintain our challenge selection process, our assessment system, and the high quality of our critiques and newsletter.

As always CMPT recognizes the valuable role that our committee members contribute. We receive the benefit of their time, knowledge, and expertise. All is appreciated.

We have active committees for our Clinical Bacteriology, Mycology, and Enteric Parasitology programs, with all members being actively involved in programmatic review and critique development.

Our committee renewal process will continue on a more regular basis, keeping in mind the importance of maintaining the right balance between experience and fresh ideas.

I want to thank Dr. Diane Roscoe for all her years of service and contribution to making CMPT a successful program.

### Management of CMPT Quality Management External Review

CMPT was successfully audited by SAI Global in April 2018 and our Quality System was recognized as being in compliance with ISO 9001:2015 (Quality Management – Requirements) with no deficiencies.

In addition, we completed our initial audit for compliance with the international standard ISO/ IEC 17043:2010 (Conformity assessment -General requirements for proficiency testing) under the authority of the American Association for Laboratory Accreditation (A2LA). Next year, we start our second cycle with an external A2LA audit with 2 external assessors.

Over the years, we have found immense value in our 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 has learned the skills of Quality Management, planning and development of customer services and satisfaction. As the national community of laboratories has consolidated, we have remained financially stable and secure and found the path towards continued innovation and development.

## CHAIRMAN'S ANNUAL REPORT

### Internal Audits

Two internal audits were completed in February 2017 as part of our external certification and accreditation audits. One was done consistent with ISO9001 and the other consistent with ISO17043. No significant deficiencies were identified, but a number of minor issues required addressing and were successfully completed.

### Review of Laboratory Safety

CMPT has formalized its safety processes significantly. In addition to our planned Quality Management System internal audits, we also complete monthly Safety audits which are performed and recorded using an on-line survey. There was also an external safety audit performed within our university department.

We continue to meet all UBC and national requirements for safety.

In recent times, CMPT has ensured compliance with Canada's Human Pathogens and Toxins Act (HPTA) and has maintained our record of microorganisms that have been shipped internationally.

### Opportunities for Improvement reported during 2017-2018

Over the past 12 months (August 2017-July 2018), there were 16 Opportunities for Improvement (OFI) recorded. This was down from 39 the previous year and 59 the year before that. While it would be difficult to say with certainty, there was no apparent decrease in attentiveness to detail. This may be an indication that CMPT has integrated Quality practices into its norm.

That being said, seven of the errors were slips, many of which occurred during very busy sample packaging and shipping times, which are complicated. Some of this is likely the result of rushing which is a well known risk factor for error and failures. We have implemented changes into the procedures at those times to increase procedure checks.

### CMPT Resources

CMPT relies on the revenues generated through program registration for cost recovery. Over the past several years, many Canadian provinces have undergone laboratory restructuring and consolidation, which could have had a devastating impact on some of our programs. Instead, through innovation and foresight, we have developed additional programs and secured new opportunities to expand our menu of assays and have developed new opportunities to maintain our financial security without putting major pressures on our laboratory partners.

We have found alternate revenue streams, including active research and development to develop new and novel materials for our own programs and, also, through collaborating with other EQA programs by providing them with consultation assistance and, in some cases, samples. Achieving ISO17043:2010 accreditation has enhanced our ability to grow this additional resource arm, and allows us to support our growing staff, and to enhance our research and development programs.

We will continue with our policy of incremental charge increases, limited to costs of business only. In that regard, we have been able to avoid undue impacts from the fall of the Canadian dollar in relationship to the United States through purchasing through selected Canadian distributors.

CMPT is acknowledged by the Department of Pathology and Laboratory Medicine as one of the strongest revenue generators within departmental finances.

## CHAIRMAN'S ANNUAL REPORT

### Training, Competency, Proficiency

Our staff is stable and their competency and proficiency is assured. We use our OFI recording as our foundation for monitoring ongoing needs for retraining/

### Review of Continuing Education

CMPT is committed to providing opportunities for our staff to participate in education opportunities. In part, this is covered through ongoing maintenance of on-line courses required by the university and opportunities to attend national and local conferences.

### Review of CMPT Quality System

This year, the review of our Strategic Quality Plan (SQP) and Quality Forms (SQF) resulted in some important changes. Several changes were incorporated in 2017-2018. Changes were made within Terms and Definitions (SQP002) and Customer Satisfaction (SQP017) to reflect the impact of the new definition of Customer in ISO9000 and ISO9001.

### Review of Programs Proficiency Testing

External Quality Assurance (EQA) is the core activity of CMPT. A hazard to programs, like EQA, as the number of laboratories is reduced through governmental policies of consolidation, the number of laboratories needing EQA is reduced. Over the past 10 years, the number of EQA requiring clinical laboratories has been reduced to almost half.

The changing landscape of medical laboratories in terms of size, number, and activity has stimulated us to be ever vigilant for 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.

CMPT provides EQA for Clinical Bacteriology in a variety of formats, Clinical Mycology, and Enteric Parasitology.

CMPT continues to be a major provider of proficiency testing materials for water-testing laboratories across Canada both in the area of drinking water and recreational water. In British Columbia, water laboratories are accredited by the Enhanced Water Quality Assurance (EWQA) program. CMPT works with EWQA and the Ministry of Environment to ensure that water testing laboratories are competent and proficient and provide reliable information for public health protection.

The largest joint accreditation and proficiency testing for water laboratories program in Canada is the Canadian Association for Laboratory Accreditation (CALA). CMPT will be providing water testing proficiency samples for CALA for the next two years (2018-2020), with a possible extension to 2022.

### International Training

CMPT has long recognized the importance of ensuring EQA proficiency based on realistic samples not only in Canada, but also in developing regions around the world. Over the last decade we have provided educational PT training for delegates from more than 10 countries.

In 2017-2018, following a review of our past experiences, CMPT decided that asking people to come to Vancouver for EQA training was prohibitively expensive. While we had several good examples of successful training (Zimbabwe, South Africa, China, United Arab Emirates), for many others doing their training in our laboratory was difficult to translate to their own facilities at home. We have decided to suspend the in-Vancouver experiences and start looking for opportunities to do training abroad, either independently or with other EQA partners.

## CHAIRMAN'S ANNUAL REPORT

### Proficiency Testing Assistance

CMPT regularly receives requests to provide benefit and experience to other programs. Some of these are provision of administrative expertise or provision of specialized samples that are stable and can travel for extended time and distances.

CMPT views the landscape of EQA, both national and international as an opportunity for collaboration for the betterment of healthcare and patient safety.

Dr. Noble has been appointed as the Chair of the Microbiology Working Group for the European Committee for External Quality Assessment for Laboratory Medicine (EQALM) for 2015-2019. In 2017, Dr. Noble gave two presentations at the Annual EQALM Conference in Dublin Ireland, one on EQA of Antibiotic Resistant Bacteria, and one on Extending the Spectrum of EQA (Pre-, Peri-, Post-, and Examination challenges) using video challenges.

Currently working with Oneworld Accuracy, and International Training and Education Center for Health (I-TECH) and Diagnostic Microbiology Development Program (DMDP), Dr. Noble is actively involved in assisting organizations in Cambodia and Nigeria develop their own microbiology EQA systems.

### CMPT Professional Development Course (PDC)

In 2014, CMPT proposed a program where laboratorians could receive continuing education credits for reading the critiques in our Clinical Bacteriology, Mycology, and Enteric Parasitology programs and answering an on-line quiz. During 2015, a trial program was created with about 50 participants. A post program survey indicated a very positive response rating the program as Excellent or Very Good and considered both Educational and Informative.

Following the survey, in 2016, a decision was made to formally launch the Professional Development Course. During the first year, the course had 156 registered participants with 98/156 completing at least one quiz and 52 participants completed at least one category (Clinical Bacteriology, Mycology, or Enteric Parasitology). Certificates were achieved upon completion of one category.

In 2017-18, CMPT PDC was extended to include Microbiology residents and people from abroad, including participants from Belgium and Ethiopia. In 2018, the number of participants from Ethiopia again increased.

We considered the CMPT Professional Development Course an important and ongoing success.

### CMPT Research and Development internal projects

In CMPT's experience, if we are standing still, we are falling behind. Our success has come from our commitment to Quality and to ongoing research and development.

This year we have developed two new programs including a new screen panel for enteric pathogens which can be used by laboratories using either traditional or molecular techniques. In addition, we have continued our development of our video challenges as an alternative to paper challenges, especially for pre- and peri- examination phase issues, including safety.

Potentially, our most important research and development will be in the area of improved informatics. Following our last satisfaction survey which was very successful (see below) a number of participants identified difficulties in entering information on our data entry on-line pages. Rather than depend on external web developers, we can develop a new set of entry pages, using Word Press with specific add-ins, that should satisfy those having difficulties.



## CHAIRMAN'S ANNUAL REPORT

### CMPT Quality Indicators

#### Clinical Bacteriology Appeal Resolution

Year	Graded Challenges	Appeals	Support request	Affirm committee
2004-05	6378	11		
2005-06	6378	21		
2006-07	x	20		
2007-08	x	31		
2008-09	x	15		
2009-10	x	13		
2010-11	6067	15	6	9
2011-12	6726	13	2	11
2012-13	6325	x	x	X
2013-14	6300	17	6	11
2014-15	6013	17	6	1
2015-16	6013	9	4	5
2016-17	3992	1	0	1
<b>2017-18</b>	<b>4829</b>	<b>2</b>	<b>2</b>	<b>0</b>

This year, CMPT had 4829 graded challenges in the Clinical Bacteriology surveys. This was an increase of 21 percent over the previous year. CMPT received only 2 requests for committee appeal of the assigned grade. This follows the trend of the year previous when only one appeal request was received. There is no indication in customer service surveys that this change is associated with any negative view of CMPT's response to appeals. We will continue to follow this trend with interest.

#### Ungraded samples

Over the years, CMPT sample grading has become increasingly complex. Of 6013 challenges derived from the 4829 samples sent, 5008 (72.5%) were graded. This was a decrease both in total number of challenges and in the percent graded compared to the previous year. The most common reason that a challenge is not graded is because the laboratory reports that it did not process the type of sample presented. That being said, no sample was found to be devoid of any gradable challenges as a result of a damage or contamination.

Year	Ungraded samples
2000-2001	0
2001-2002	3
2002-2003	3
2003-2004	3
2004-2005	3
2005-2006	3
2006-2007	4
2007-2008	3
2008-2009	1
2009-2010	2
2010-2011	0
2011-2012	0
2012-2013	3
2013-2014	0
2014-2015	0
2015-2016	0
2016-2017	0
<b>2017-2018</b>	<b>0</b>

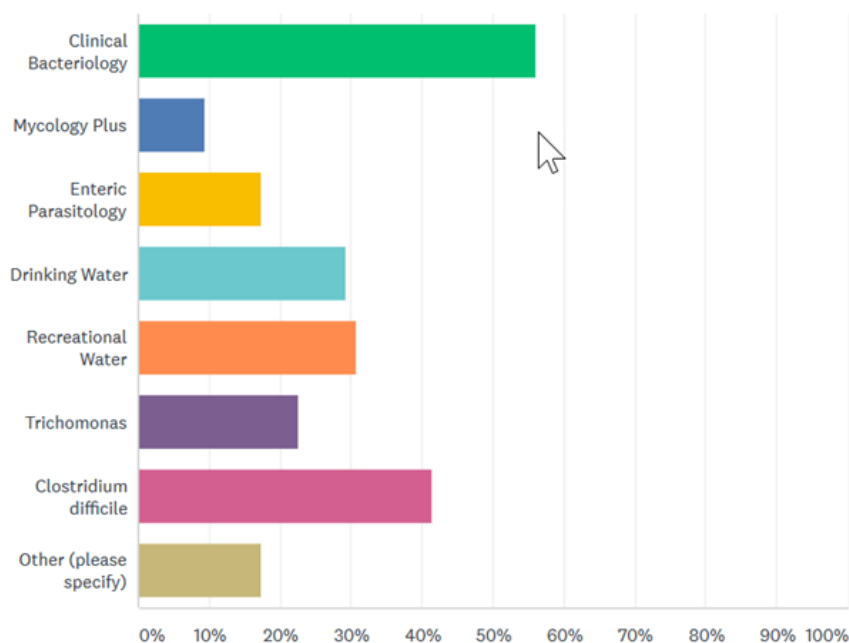
## CHAIRMAN'S ANNUAL REPORT

### Customer Satisfaction Surveys

In 2017-18, CMPT performed our satisfaction survey specifically to address laboratories' views of the CMPT's strengths and weaknesses in Customer Service. The survey had a response rate nearing 50 percent of participants. While the participation from water laboratories was lower than from clinical laboratories, we believe the results to be generalizable to both groups.

### In which CMPT programs does your laboratory participate?

Answered: 75 Skipped: 0



With respect to our samples, all laboratories reported that our samples either met or exceeded their requirements either all or most of the time.

ANSWER CHOICES	RESPONSES
▼ We find CMPT provides PT/EQA samples and reports that regularly meet or exceed our needs and expectations.	26.67% 20
▼ We find CMPT provides PT/EQA samples and reports that meet our needs and expectations.	58.67% 44
▼ We find CMPT provides PT/EQA samples and reports that are acceptable and usually meet our PT/EQA needs	12.00% 9
▼ We are indifferent to CMPT PT/EQA samples and reports	0.00% 0
▼ We have far too many problems with CMPT PT/EQA samples and reports	0.00% 0
▼ None of the responses apply, Please comment: <a href="#">Responses</a>	2.67% 2
<b>TOTAL</b>	<b>75</b>

## CHAIRMAN'S ANNUAL REPORT

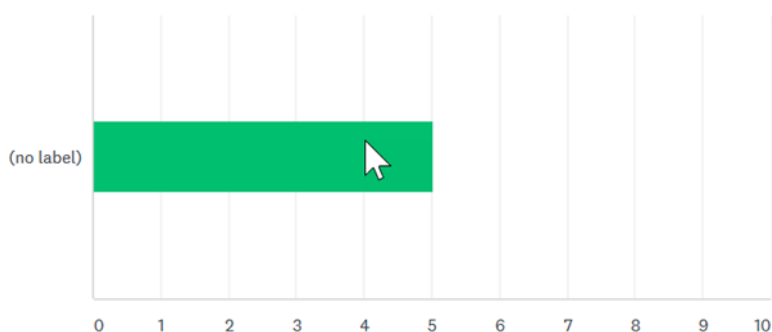
Similarly, over 90% of laboratories found our services including timeliness and information were helpful and responsive.

ANSWER CHOICES	RESPONSES
▼ We find that CMPT services such as sample transport, information forms and access to reports are timely and helpful. When occasional problems arise CMPT responds rapidly and effectively.	77.33% 58
▼ We find that CMPT services such as sample transport and information forms and access to reports are timely and helpful. When occasional problems arise CMPT usually responds rapidly and effectively	14.67% 11
▼ We find that CMPT services such as sample transport and information forms and access to reports are usually timely and helpful but we have had problems	4.00% 3
▼ We find that CMPT services such as sample transport and information forms and access to reports are all too often erratic.	0.00% 0
▼ We find trying to get assistance from CMPT unhelpful	0.00% 0
▼ None of the above apply: Please comment. <a href="#">Responses</a>	4.00% 3
<b>TOTAL</b>	<b>75</b>

Overall, over 95 percent viewed our customer services as excellent or more than meeting their needs (A+, A, B+). This indicated to us that we are achieving our goals. Importantly, we were also aware that there were some (2: 2.7%) who were not satisfied with our performance. We look at this group as an important voice in order for CMPT to improve.

Please rate CMPT an overall assessment of its Customer Service activities

Answered: 74 Skipped: 1



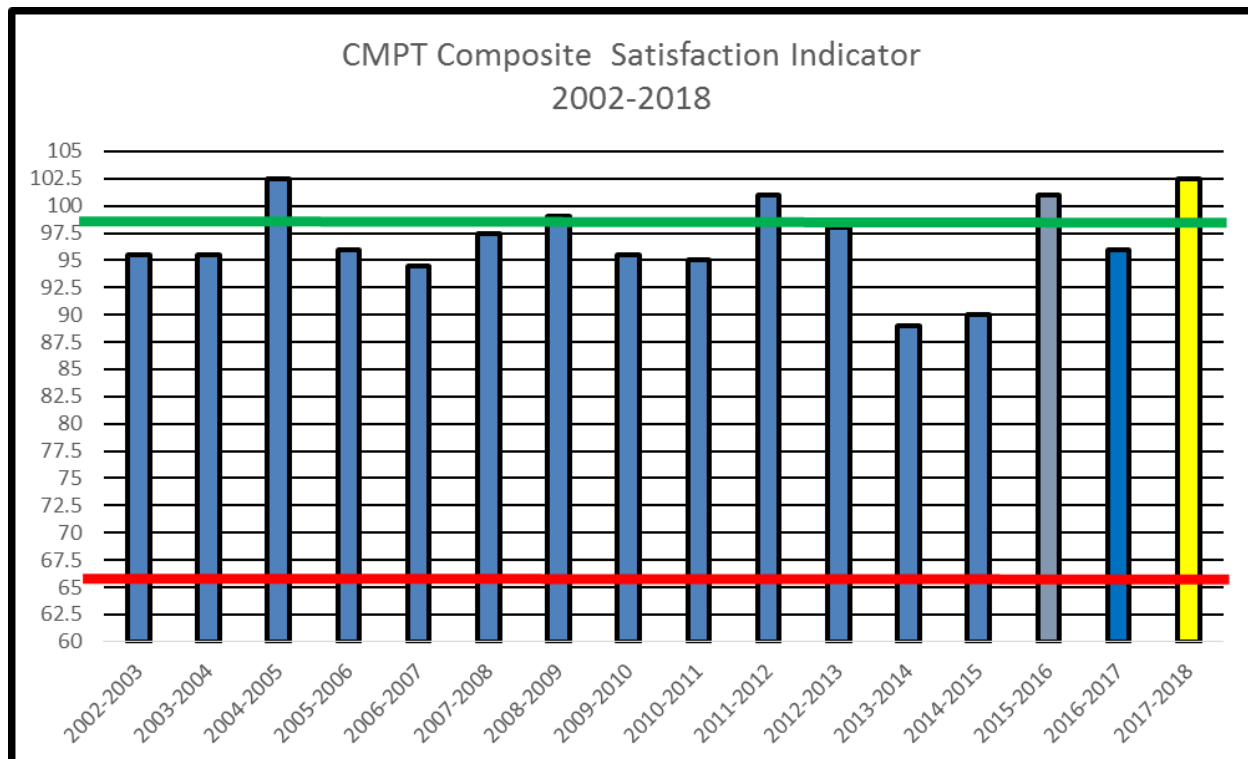
	A PLUS	A	B PLUS	B	C	D	FAIL	TOTAL	WEIGHTED AVERAGE
▼ (no label)	27.03% 20	56.76% 42	12.16% 9	1.35% 1	1.35% 1	1.35% 1	0.00% 0	74	5.03

## CHAIRMAN'S ANNUAL REPORT

### CMPT Composite Satisfaction Score (CSS)

Each year, CMPT combines the information from the surveys with other factors (contracts, complaints, consultations) and derives a weighted composite score Customer Satisfaction. In the weighting negative comments, lost contracts and complaints are weighted greater than positive counterparts. We have been monitoring this indicator since 2002-2003 (15 years). In 2017-18, CMPT had 2 new contracts (20), 2 sustained contracts, 1 new consultations (+10), and no complaints or lost contracts. The approval rating for the satisfaction surveys was 95 (+950). In addition, there were 10 free text positive comments (+50) and 5 negative one (-50). Our aggregate weighted score for 2017-2018 was 102.5, which exceeds both our previous year and returns above our excellence level. A composite score of 102.5 matches our high score not previously achieved since 2004-2005.

Because the same survey structure has been used for 15 years, we would not likely make any changes without considerable review and analysis.



## CHAIRMAN'S ANNUAL REPORT

### CMPT Presentations and Publications

1. Noble MA. Kick-off workshop for Quality Assurance Officers and Laboratory Leadership. Six presentations on Quality Management, Proficiency Testing, Error Detection, Culture of Quality, Teaching Techniques. In conjunction with International Training and Education Center for Health (ITECH) Lusaka Zambia May 2017,
2. Noble MA. Is ISO9001:2015 A Quality Option for the Medical Laboratory? POLQM October Quality Conference. Vancouver BC. October 2017
3. Noble MA. Training in the Many Aspects of Medical Laboratory Quality POLQM October Quality Conference. Vancouver BC. October 2017
4. Noble MA Extending the spectrum of PTIEQA to the PrePostand PeriExamination Phases. EQALM Dublin Ireland October 2017
5. Noble MA Medical Laboratory Performance on Detection of Antimicrobial Resistance: An EQALM Microbiology Working Group Study. EQALM Dublin Ireland October 2017
6. Noble MA Designing a Quality Manual. Quality Management Workshop. Siem Reap Cambodia. February 2018.
7. Noble MA Costing Poor Quality. Quality Management Workshop. Siem Reap Cambodia. February 2018.
8. Noble MA. Medical Laboratory Quality Assurance: Are You A Laboratory? Quality Management Workshop. Siem Reap Cambodia. February 2018.
9. Noble MA. Introducing Lean and Six Sigma. Quality Management Workshop. Siem Reap Cambodia. February 2018.
10. Noble MA. Why Quality Management? Why Now? Quality Management Workshop. Siem Reap Cambodia. February 2018.
11. Veronica Restelli, Annemarie Taylor, Douglas Cochrane and Michael A. Noble 2017. \* Medical laboratory associated errors: the 33-month experience of an on-line volunteer Canadian province wide error reporting system *Diagnosis* (De Gruyter) May 8, 2017
12. Noble MA, Restelli V, Taylor A, Cochrane D, 2018. Laboratory error reporting rates can change significantly with year-over-year examination. *Diagnosis* (Berl). 2018 Mar 28;5(1):15-19. doi: 10.1515/dx-2017-0043.
13. Noble MA, Rennie R Combined international external quality assessment results of medical laboratory performance and reporting of samples with known antimicrobial resistance. *Diagnosis* (Berl). 2018 Jun 15. pii: /j/dx.ahead-of-print/dx-2018-0020/dx-2018-0020.xml. doi: 10.1515/dx-2018-0020. [Epub ahead of print]

## CHAIRMAN'S ANNUAL REPORT

### CMPT and Strategic Planning

CMPT continues to function consistent to its Mission and Vision statements. Our long term objectives continue as iterated in our Vision statement (see above). In order to continue to meet our expectations, the following issues have been identified that need to be addressed over the shorter term: workload, financial resources, space, sample supply chain, partnerships, research, and committee structure.

### CMPT Research

Over the years, CMPT has been able to engage in a continued program of internally funded research and development that has resulted in our being leaders in the production of clinically realistic challenge samples in bacteriology and toxin testing, mycology, and water bacteriology. Lead by Caleb Lee, we have developed strategies that significantly extend the shelf and transport life of samples and developed more realistic sample simulations. We have made significant improvements in work flow as a result of these efforts. These programs will continue.

### Succession Planning

Over the past several years, CMPT has had concerns about having an organized process to new management in order to ensure the continuity of CMPT as we go forward into the years to come. Dr. Noble has started his process towards changing from full faculty to emeritus. This has triggered an active search process for his replacement.

### www.CMPT.ca and Publications

As previously mentioned, CMPT website has become the program's primary communication centre for data entry, preliminary results, critiques, newsletters, and the annual report. Recent satisfaction surveys focused on the value of this site. The results were mentioned previously.

### Looking to the Future

As a direct consequence of the recognition of our ISO17043:2010 accreditation, and our presence on the international stage, CMPT has been approached by new laboratories across Canada and Europe and as well as the United States and South America for new opportunities. When these are combined with our increasing international collaborations, CMPT appears to have a strong go-forward future.

### Effectiveness of our Quality Management System

Overall we have strong evidence that our Quality Management System is working and is effective for us. As mentioned while we continue to reinforce the importance of identifying and reporting our opportunities for improvement, the number of OFIs being recorded is fewer than before. We continue to have strong positives from our satisfaction surveys, and we continue to attract new opportunities to expand our international influence. We are convinced that our known accreditation to ISO17043:2010 opens a variety of doors and the stability of our system gives us the wherewithal to successfully follow through.

A new Strategic Plan (SWOT) was developed. Consistent with ISO 9001:2015, the plan was developed to take into consideration both internal and external factors.

## CHAIRMAN'S ANNUAL REPORT

### Workload

There have been continued decreases in laboratory participants (external threat), but not to the level that has reduced the workload. Over the previous year, we made a strategic increases to CMPT personnel to accommodate a new long-term contract (external strength). Fion Yung is now fully trained and well-integrated into our group (internal strength). We do not perceive our needing to make personnel changes in the upcoming years.

### Financial resources

As the number of laboratories in many provinces continues to consolidate, the number of laboratories participating in CMPT Clinical Bacteriology program continues to reduce (external threat). This change in our domestic market has be off-set with new clients from abroad and new contacts (external strength) .

That being said, we have continued under the management of Esther Kwok to keep close attention to spending and strong fiscal management (internal strength).

### Space

Our facility on the UBC Campus continues to be an efficient and effectiveness space (internal strength). This has provided closer contacts with the department and with UBC safety (internal opportunity).

### Equipment

Over the last few years we have been able to upgrade some key equipment (internal strength). One purchase of a "bead bath" to supplement our water bath for water samples did not work out successfully (internal weakness). It is being replaced with a new water bath.

### Enteric sample suppliers

All EQA programs across North America, and increasingly also in Europe have had difficulties in finding sufficient samples to provide enteric parasite assessments (external weakness). Some programs have found an alternative solution by using circulated photographs. CMPT has worked hard at maintaining its program based in true samples. We have identified new providers of sample materials which have the potential to sustain our program (internal strength).

### Partnerships

CMPT has developed partner/collaborative relationships with Canadian Immunohistology Quality Control (ciQc), Oneworld Accuracy network, International Training and Education Center for Health (ITECH) in the Department of Global Health, University of Washington, and Diagnostc Microbiology Development Program (DMDP) and with the European Committee for EQA in Laboratory Medicine. We have renewed our work and collaboration with the Canadian Association for Laboratory Accreditation (CALA) (internal and external strength).

## CHAIRMAN'S ANNUAL REPORT

As part of our Quality Management System, CMPT sets its goals and objectives for the upcoming year and well as reviews its success with the previous goals. Since our inception we have only failed to meet one annual objective.

### GOALS and OBJECTIVES 2017 - 2018

<b>P17_1</b>	Investigate the possible acquisition of a new autoclave	Postponed/cancelled
<b>P17_2</b>	Update the Grading Guidelines.	Ongoing
<b>P17_3</b>	Investigate the possibilities of new part time person	Deleted
<b>P17_4</b>	Investigate the possibilities of a new extended international support program for developing countries.	Ongoing
<b>P17_5</b>	Seek investigation collaborations through EQALM members.	Successful
<b>P17_6</b>	Continue forward with Succession Plan	Active underway
<b>Q17_1</b>	Continue with ISO9001 certification with ISO9001:2015	Successful
<b>Q17_2</b>	Continue with ISO17043:2010 accreditation	Successful
<b>Q17_3</b>	Redesign of our Strategic Quality Plan numbering system.	On hold

Of 18 Goals set over the past 2 years, 15 have been successfully met and completed, 2 were cancelled as no longer required, and 1 was put on hold.

### GOALS and OBJECTIVES 2018 - 2019

<b>P18_1</b>	Complete Chairman's succession.
<b>P18_2</b>	Develop & expand new international collaborations with national and international partners.
<b>P18_3</b>	Expand CMPT Professional Development Program.
<b>P18_4</b>	Develop new provincial collaborations within British Columbia
<b>P18_5</b>	Revisit SQP renumbering project
<b>P18_6</b>	Celebrate CMPT with a full Annual General Meeting in 2019
<b>P18_7</b>	Seek new members for CMPT advisory committees
<b>Q18_1</b>	Continue with ISO9001 certification with ISO9001:2015
<b>Q18_2</b>	Start our 2 <sup>nd</sup> A2LA cycle with ISO17043.



Signed Michael A Noble,  
Chair, CMPT September 2018



## COMMITTEE MEMBERS 2017 - 2018

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.

### Water Microbiology Program

Chris Enick, BSc .....Exova, Surrey, BC

### Mycology Program

Brad Jansen BSc, MLT .....Provincial Laboratory for Public Health, Edmonton, AB

Robert Rennie, PhD FCCM, D(ABMM) .....University of Alberta Hospital, Edmonton, AB

Romina Reyes, MD FRCPC .....LifeLabs, Burnaby, BC

### Enteric Parasitology Program

Romina Reyes, MD FRCPC .....LifeLabs, Surrey, BC

Joan Tomblin, MD FRCPC .....Surrey Memorial Hospital, Surrey, BC

Pauline Tomlin, ART, BSc. MPH..... Provincial Laboratory for Public Health, Edmonton, AB

Quantine Wong, BSc. MLT..... BCCDC, Vancouver, BC

### Clinical Bacteriology Program

Ghada Al-Rawahi, MD FRCPC D(ABMM) ..... BC Children's Hospital, Vancouver, BC

Lorraine Campbell, MLT.....Calgary Laboratory Services, Calgary, AB

Wilson Chan, MD FRCPC D(ABMM).....Calgary Laboratory Services, Calgary, AB

John Galbraith, MD FRCPC .....Royal Jubilee Hospital, Victoria, BC

David J. M. Haldane, MD FRCPC .....Queen Elizabeth II Hospital, Halifax, NS

James A. Karlowsky, PhD (D)ABMM..... St. Boniface General Hospital, Winnipeg, MB

Brandi Keller, MLT .....Battlefords Union Hospital, North Battleford, SK

Paul Levett, PhD (D)ABMM FAAM .....Saskatchewan Disease Control Laboratory, Regina, SK

Doris Poole, MLT, BSc.....Queen Elizabeth Hospital, Charlottetown, PEI

Robert Rennie, PhD FCCM, D(ABMM) .....University of Alberta Hospital, Edmonton, AB

Diane Roscoe, MD FRCPC .....Vancouver General Hospital, Vancouver, BC

Denise Sitter, ART .....Cadham Provincial Laboratory, Winnipeg, MB

Titus Wong, MD .....Vancouver General Hospital, Vancouver, BC

## CLINICAL BACTERIOLOGY PROGRAM

CMPT acknowledges, with appreciation, the valuable and essential advisory and technical support of the Clinical Bacteriology Advisory Committee.

### Program Overview

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.

Only category A laboratories receive all samples, category B, C, and C1 laboratories receive samples according to their capabilities.

For a more comprehensive Program Overview, please visit:

<http://cmpt.ca/eqa-programs/clinical-microbiology/>

## HISTOGRAMS 2017 - 2018

### About the histograms

All histograms have been converted to a single format, which is the 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".

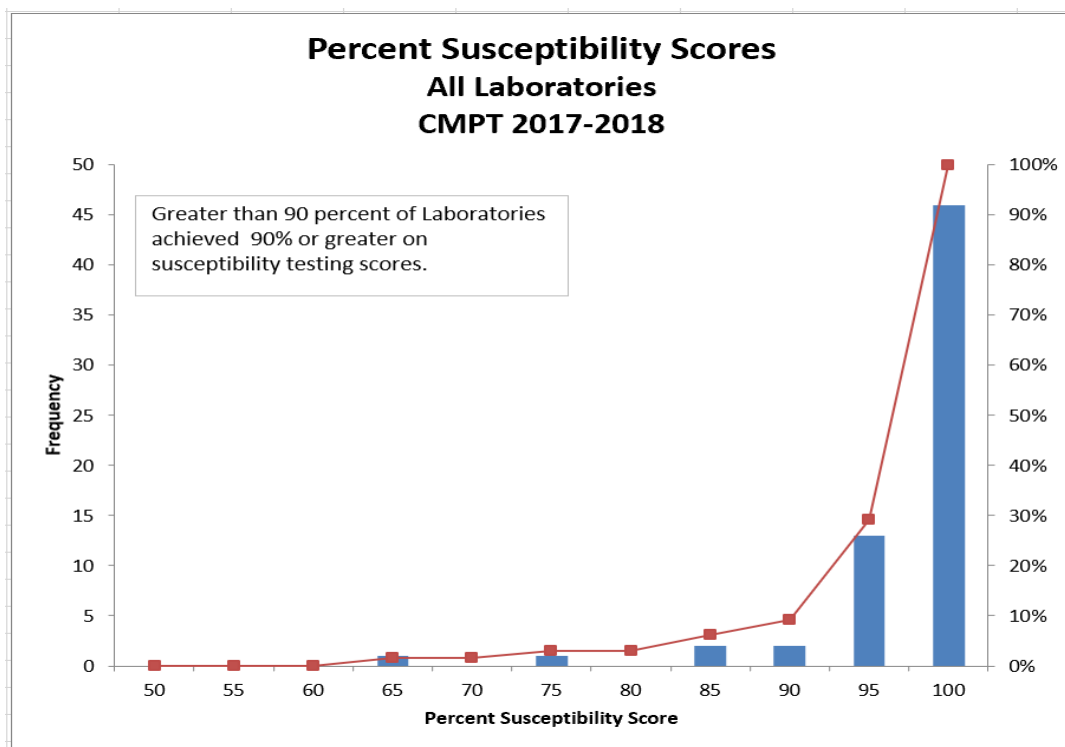
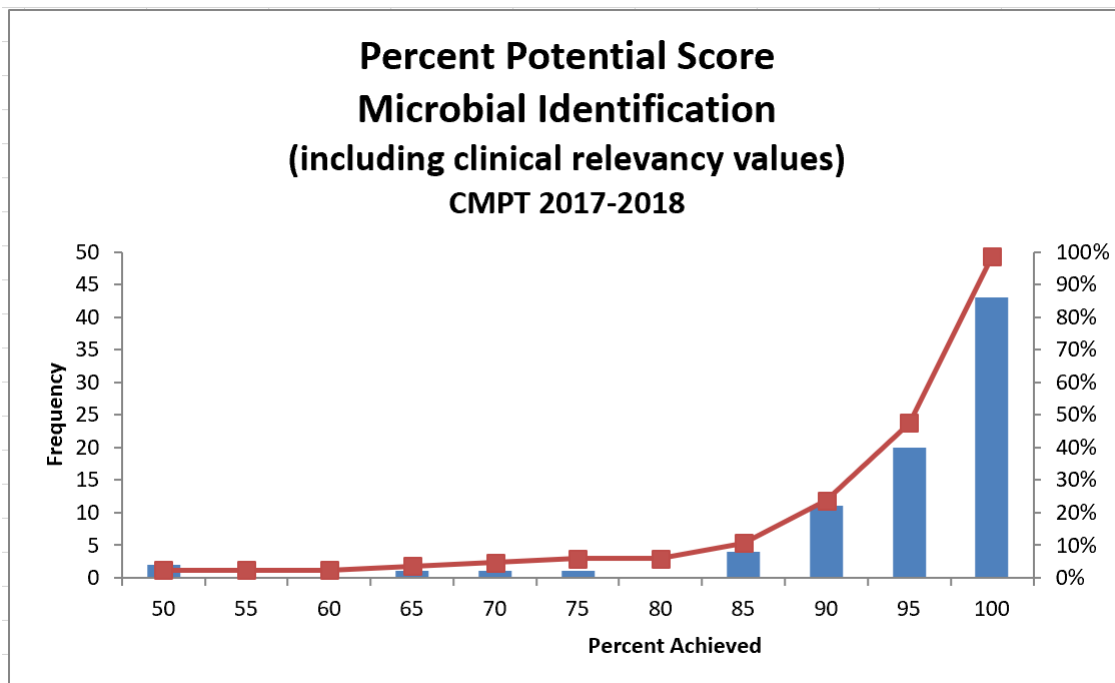
The total achievable score, that is the score the laboratory would have obtained if they received a grade of 4/4 for each graded challenge was calculated. Challenges that were ungraded were excluded. The percent achievable score was calculated as (total achieved score/total achievable score) X100.

### How to read the histograms

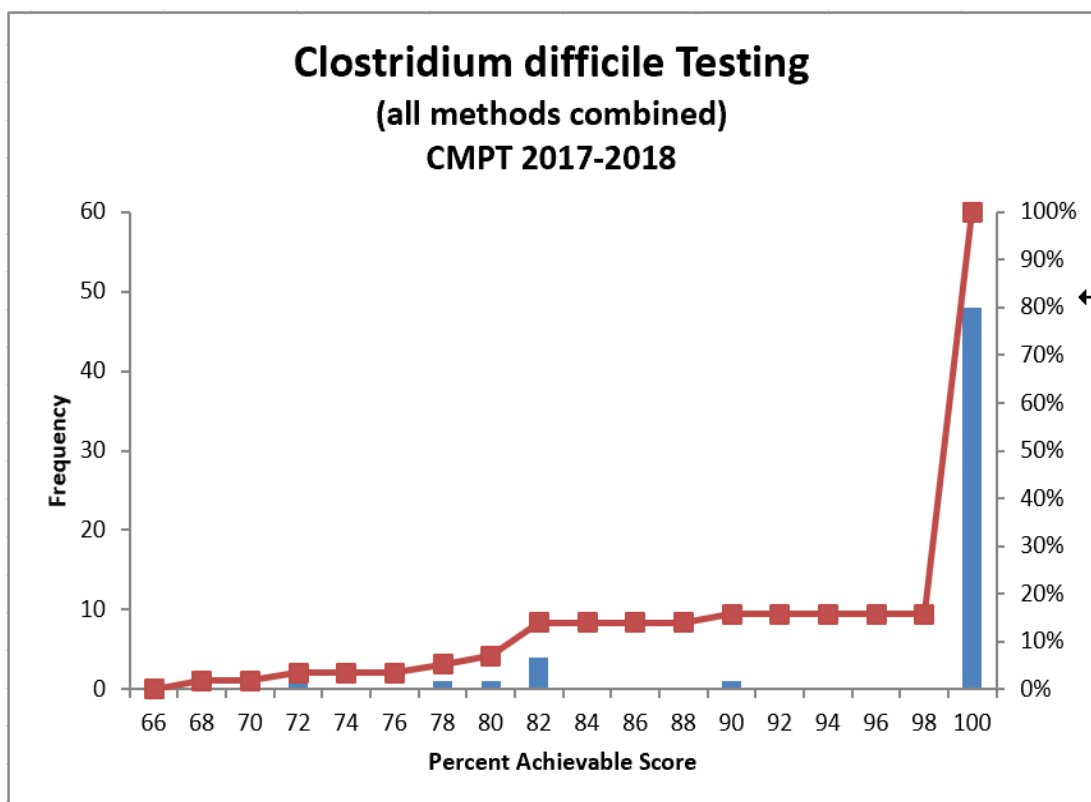
The number of laboratories achieving a specific grade is indicated by the height of the columns over the Percent Achievable Score, and is read on the LEFT side scale of the chart (frequency).

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.

## Clinical Bacteriology - Histograms



## *Clostridium difficile*- Histograms



## WATER MICROBIOLOGY PROGRAM

CMPT acknowledges with appreciation the valuable and essential advisory and technical support of:

Chris Enick BSc.....Exova, Surrey, BC

CMPT participates with the following organizations to provide external quality assessment 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

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 a qualitative method, the Presence/Absence method, as their primary method or in addition to the quantitative methods. The drinking water bacteriology (membrane filtration, Enzyme Substrate, MPN and Presence/Absence methods) challenge records for 2017 are shown in Table 1, the HPC challenge records are shown in Table 2, and the recreational water challenge records are shown in Table 3.

## WATER MICROBIOLOGY PROGRAM

**Table 1: 2017 Drinking Water Bacteriology challenge record**

Date	Sample No.	Organism	Membrane Filtration mean/median/MU% cfu/100 ml		Enzyme Substrate mean/median MPN/100 ml		MPN mean/median MPN/100 ml		Presence/ Absence (P/A)
			Total Coliforms	<i>E.coli</i>	Total Coliforms	<i>E.coli</i>	Total Coliforms	<i>E.coli</i>	Total Coliforms/ <i>E.coli</i>
W171 April 3, 2017	1	no organisms present	0/0/0	0/0/0	0/0	0/0	0/0	0/0	A/A
	2	<i>Escherichia coli</i>	48/48/15	47/48/16	51/49	50/48	≥23/≥23	≥23/≥23	P/P
	3	<i>Escherichia coli</i>	12/12/23	12/12/23	14/14	13/13	13/13	12/11	P/P
	4	<i>Enterobacter</i> species	41/42/18	0/0/0	47/46	0/0	≥23/≥23	0/0	P/A
W172 July 10, 2017	1	<i>Escherichia coli</i>	43/44/15	42/43/14	45/44	44/40	≥23/≥23	≥23/≥23	P/P
	2	<i>Enterobacter</i> species	15/15/21	0/0/0	12/13	0/0	17/16	0/0	P/A
	3	<i>Escherichia coli</i>	26/26/28	26/25/27	27/28	28/28	≥23/≥23	≥23/≥23	P/P
	4	<i>Enterobacter</i> species	12/12/33	0/0/0	14/12	0/0	15/12	0/0	P/A
W173 Oct. 23, 2017	1	<i>Enterobacter</i> species	33/33/22	0/0/0	33/32	0/0	30/23	0/0	P/A
	2	<i>Enterobacter</i> species	33/34/19	0/0/0	33/32	0/0	27/23	0/0	P/A
	3	<i>Escherichia coli</i>	52/52/18	51/51/18	54/50	54/49	≥23/≥23	≥23/≥23	P/P
	4	<i>Escherichia coli</i>	33/32/19	33/32/21	32.33	32/33	≥23/≥23	≥23/≥23	P/P

**Table 2: 2017 Drinking Water Bacteriology for Heterotrophic Plate Count**

Date	Sample No.	Organism	mean/median (cfu/ ml) /MU%
H171 April 3, 2017	1	<i>Enterobacter</i> species	53/53/12
	2	<i>Enterobacter</i> species	117/119/22
	3	<i>Escherichia coli</i>	82/82/9
	4	no organisms present	0/0/0
H172 July 10, 2017	1	<i>Escherichia coli</i>	59/59/32
	2	<i>Enterobacter</i> species	83/89/44
	3	<i>Enterobacter</i> species	71/70/22
	4	<i>Escherichia coli</i>	101/108/24
H173 October 23, 2017	1	<i>Escherichia coli</i>	66/67/29
	2	no organisms present	0/0/0
	3	<i>Escherichia coli</i>	145/146/19
	4	<i>Enterobacter</i> species	80/84/18

## WATER MICROBIOLOGY PROGRAM

Table 3: 2017 Recreational Water Bacteriology challenge record				
Date	Source	Challenge	mean/median/MU%	
			Membrane Filtration (cfu/100mL)	Enzyme Substrate MPN/100 ml
<b>R171 April 3, 2017</b>	Spa Water	<i>Pseudomonas aeruginosa</i>	368/353/16	460/435
	Freshwater Beach	<i>Escherichia coli</i>	76/74/31	79/81
	Marine Water	<i>Enterococcus</i> species	394/392/16	217/217
<b>R172 August 21, 2017</b>	Spa Water	<i>Pseudomonas aeruginosa</i>	214/219/25	199/194
	Freshwater Beach	<i>Escherichia coli</i>	413/410/14	435/435
	Marine Water	<i>Enterococcus</i> species	177/180/11	93/95

MU% - not applicable for EST, MPN or PA methods

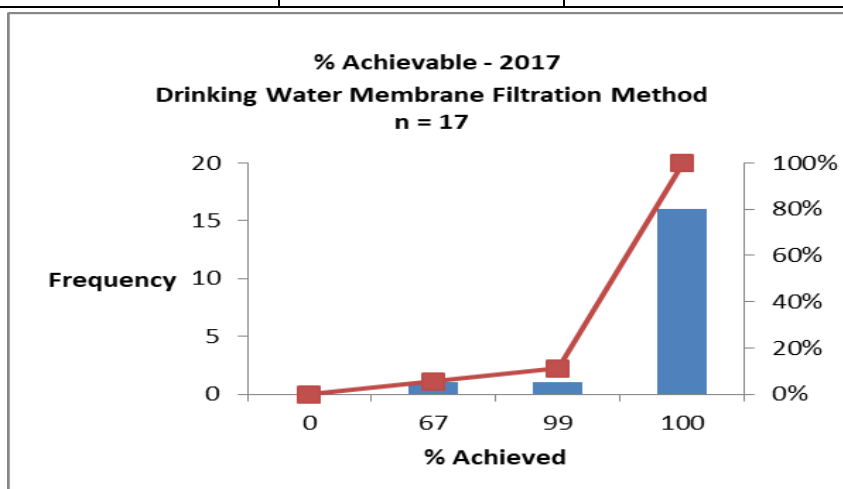
### Water Bacteriology (Drinking and Environmental Water Sample) Score

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 are, therefore, graded qualitatively. With 12 drinking water samples tested for the program year, the maximum score is 36. With 12 drinking water samples tested, using the HPC method, the maximum score is 36 for the program year. With 3 environmental water samples, laboratories can receive up to a maximum score of 9.

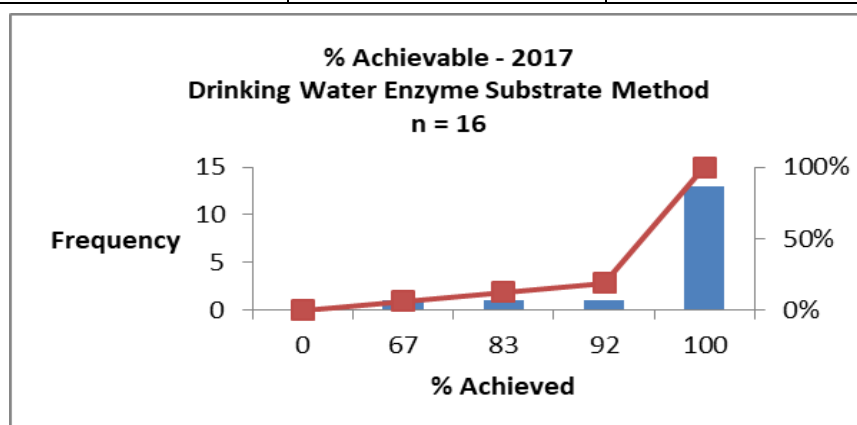
## WATER MICROBIOLOGY PROGRAM

The following Score Tables illustrate the % Achievable scores for methods used for Drinking Water samples during 2017.

Drinking Water Performance Table for the Membrane Filtration method, 2017		
% Achievable	Labs (n=17)	Cumulative %
67	1	5.6
99	1	11.1
100	17	100



Drinking Water Performance Table for Enzyme Substrate Methods, 2017		
% Achievable	Labs (n=16)	Cumulative %
67	1	6.3
83	1	12.5
92	1	18.8
100	13	100

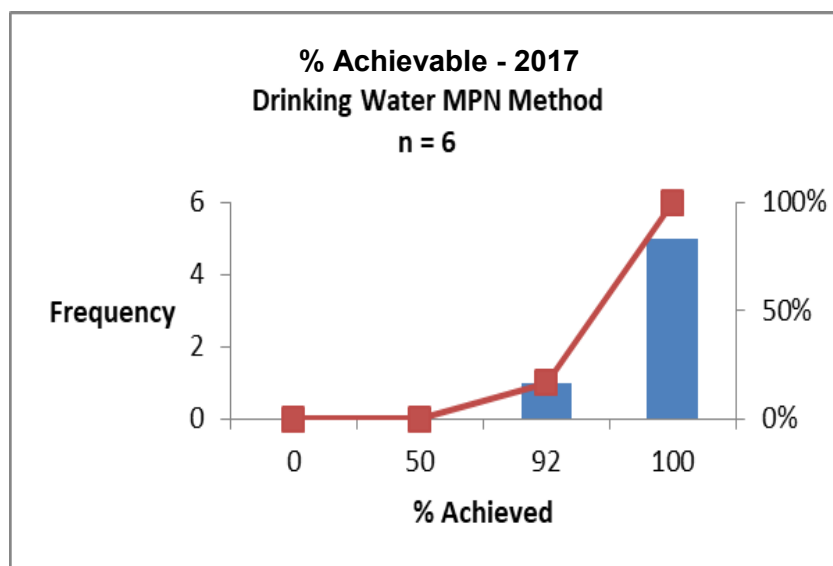




## WATER MICROBIOLOGY PROGRAM

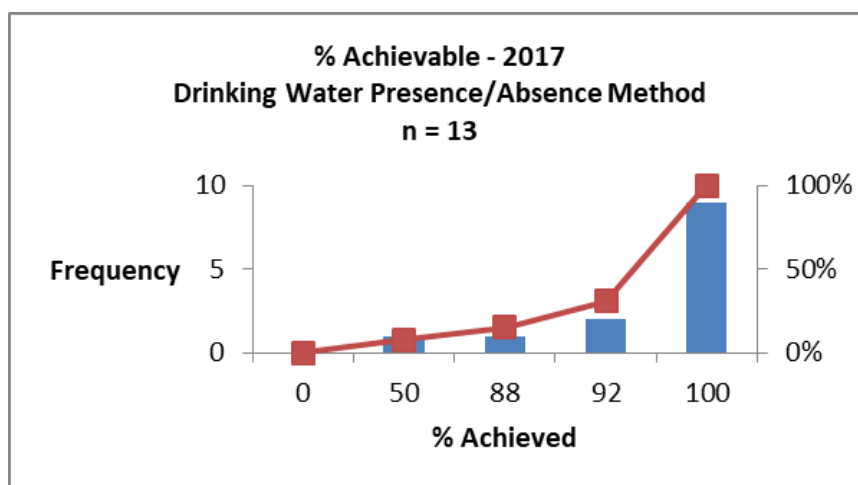
**Drinking Water Performance Table for Most Probable Number (MPN) method, 2017**

% Achievable	Labs (n=6)	Cumulative %
92	1	16.7
100	5	100



**Drinking Water Performance Table for Presence/Absence methods, 2017**

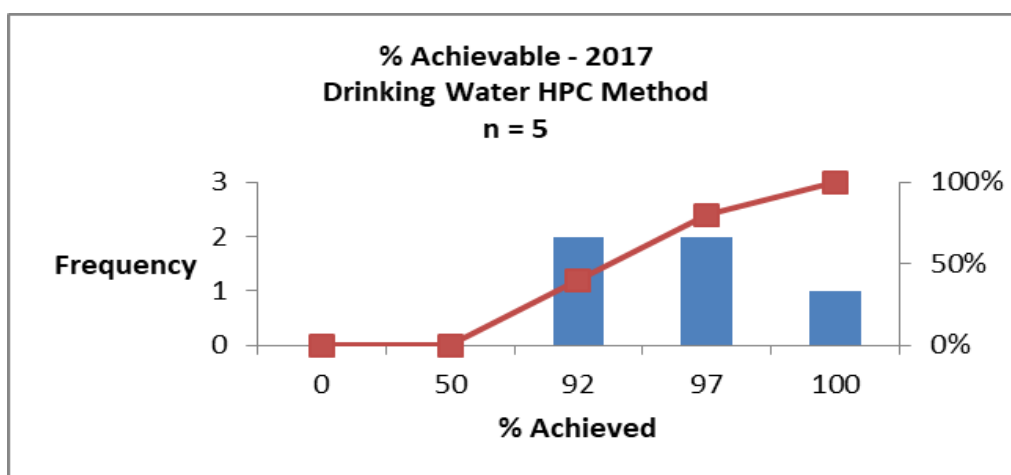
% Achievable	Labs (n=13)	Cumulative %
50	1	7.7
88	1	15.4
92	2	30.8
100	9	100



## WATER MICROBIOLOGY PROGRAM

The following Table illustrates the % Achievable scores for the Heterotrophic Plate Count method used for Drinking Water samples during 2017.

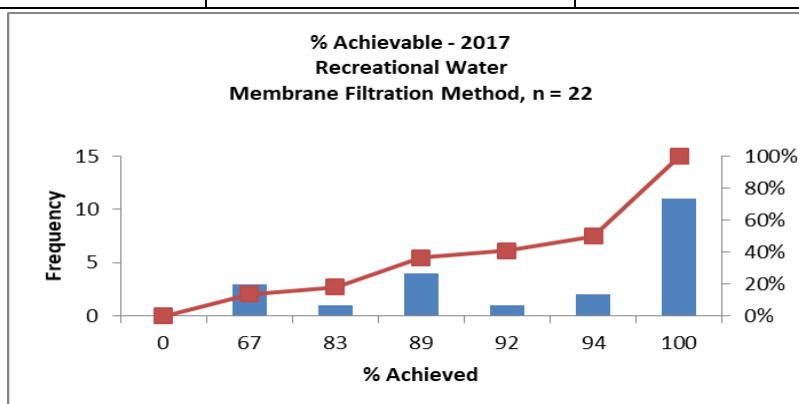
Drinking Water Performance Table for the Heterotrophic Plate Count (HPC) method, 2017		
% Achievable	Labs (n=5)	Cumulative %
92	1	40
97	2	80
100	3	100



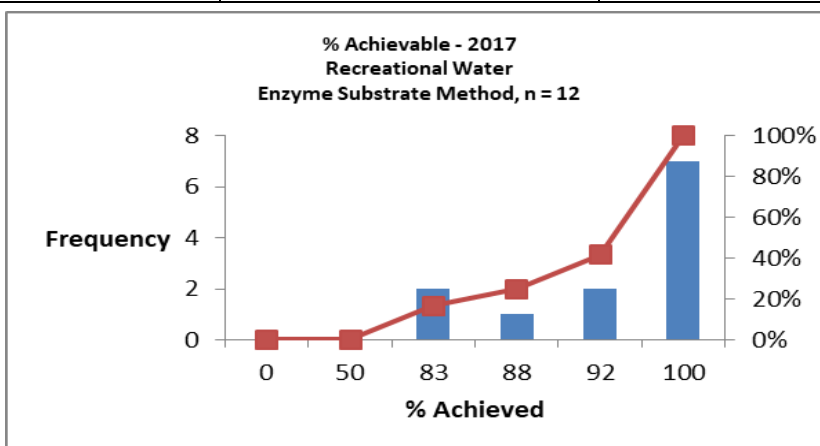
## WATER MICROBIOLOGY PROGRAM

The following Score Tables illustrate the % Achievable scores for Membrane Filtration and Enzyme Substrate methods used for Recreational Water samples during 2017.

Recreational Water Performance Table for the Membrane Filtration method, 2017		
% Achievable	Labs (n=22)	Cumulative %
67	3	13.6
83	1	18.2
89	4	36.4
92	1	40.9
94	2	50
100	11	100



Recreational Water Performance Table for the Enzyme Substrate method, 2017		
% Achievable	Labs (n=12)	Cumulative %
83	2	16.7
88	1	25
92	2	41.7
100	7	100

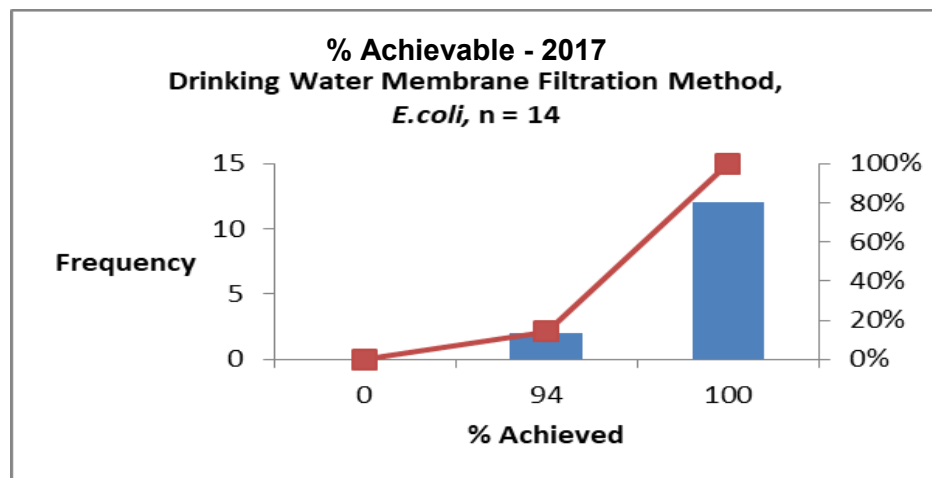


## WATER MICROBIOLOGY PROGRAM

### *E.coli* Supplemental Testing

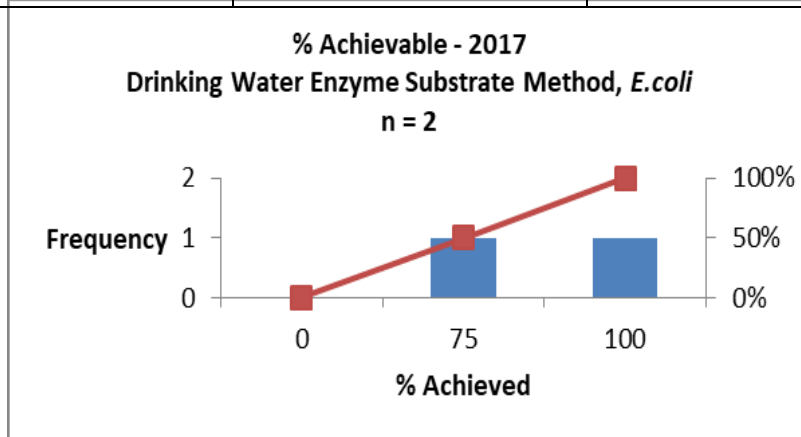
Laboratories perform supplemental water bacteriology testing to discern *Escherichia coli* from other thermotolerant coliforms. These laboratories are assessed as a separate group and are assessed an additional 36 points maximum for the program year per method, if *Escherichia coli* and thermotolerant coliforms are reported. The Membrane Filtration and the MPN methods are the primary methods used for testing, however, two laboratories tested the water samples using the Enzyme Substrate method.

Drinking Water Performance Table for Membrane Filtration method, <i>E.coli</i> , 2017		
% Achievable	Labs (n=14)	Cumulative %
94	2	14.3
100	12	100

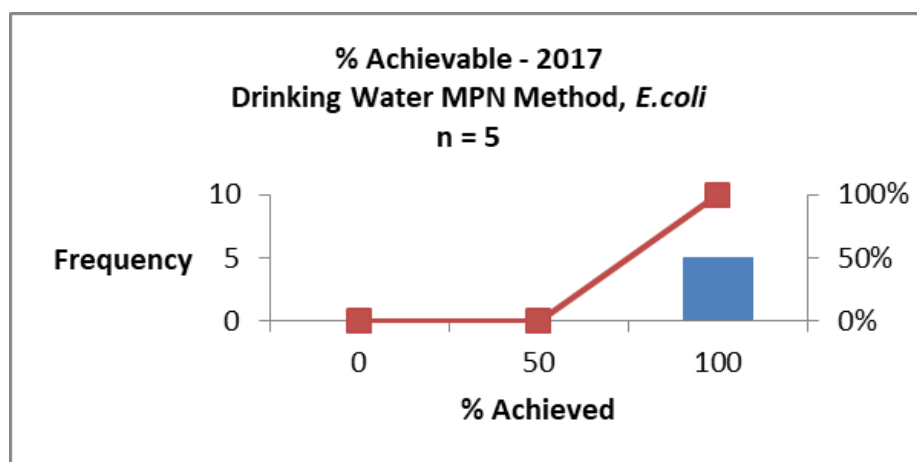


## WATER MICROBIOLOGY PROGRAM

Drinking Water Performance Table for Enzyme Substrate methods, <i>E.coli</i> , 2017		
% Achievable	Labs (n=2)	Cumulative %
75	1	50
100	1	100



Drinking Water Performance Table for Most Probable Number (MPN) method, <i>E.coli</i> , 2017		
% Achievable	Labs (n=5)	Cumulative %
100	5	100



## MYCOLOGY PROGRAM

CMPT acknowledges with appreciation the valuable and essential advisory and technical support of:

Robert Rennie MD FRCP .....University of Alberta Hospital, Edmonton, AB

Romina Reyes MD FRCP .....LifeLabs, Burnaby, BC

Brad Jansen BSc, MLT .....University of Alberta Hospital, Edmonton, AB

The Mycology Plus Program was introduced to participants in June 2001 and includes 12 proficiency challenges for dermatophytes, common laboratory contaminants, yeast identification and Fungal Smear slides. In 2016-2017, grades were awarded to the Fungal Smears and identification challenges 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. However, reports for susceptibility testing remain ungraded.

**Table 1: 2017-2018 challenge results**

Survey	Samples			Grades		
				Acceptable	Unacceptable	Ungraded
MY 1709 September 18, 2017	Fungal Smear (hyphae)	A	negative	8	2	0
		B	negative	10	0	0
		C	positive	9	1	0
	Yeast	1	<i>Candida albicans</i> *	8	0	1
	Dermatophyte	2	<i>Microsporum cookei</i> /species	8	0	1
	Mold	3	<i>Aspergillus flavus</i> /species	9	0	0
MY 1801 January 15, 2018	Fungal Smear (hyphae)	A	positive	11	0	0
		B	positive	11	0	0
		C	positive	11	0	0
	Yeast	1	<i>Candida glabrata</i> *	10	0	0
	Dermatophyte	2	<i>Epidermotophyton floccosum</i>	9	1	0
	Mold	3	<i>Stachybotrys</i> species	10	0	0
MY 1804 April 16, 2018	Fungal Smear (hyphae)	A	negative	7	0	4
		B	positive	11	0	0
		C	negative	11	0	0
	Yeast	1	<i>Cryptococcus neoformans</i>	9	1	1
	Dermatophyte	2	<i>Microsporum canis</i>	10	0	0
	Mold	3	<i>Fusarium</i> species	10	0	0
<b>Totals</b>				<b>172</b>	<b>5</b>	<b>7</b>

\*susceptibilities applicable

## ENTERIC PARASITOLOGY PROGRAM

CMPT acknowledges with appreciation the essential advisory and technical support of:

Romina Reyes MD FRCPC.....LifeLabs, Surrey, BC

Joan Tomblin MD FRCPC.....Royal Columbian Hospital, New Westminster, BC

Pauline Tomlin MPH, ART, BSc.....Provincial Laboratory for Public Health, Edmonton, AB

Quantine Wong BSc.....BCCDC, Vancouver, BC

Samples are supplied by LifeLabs, DynaLife<sub>DX</sub> and BCCDC. The program consists of 3 surveys. Each survey consists of 3 SAF preserved samples requiring a total of 9 challenge readings that include 3 concentrates and 3 stained smears.

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 1 lists the samples and grades received for the 2017 challenges.

Table 1 - Enteric Parasitology Challenges 2017					
Date	Sample	Parasite	Acceptable	Unacceptable	Ungraded
April 10, 2017	1704-1	no ova and parasites seen	18	0	0
	1704-2	<i>Trichuris trichiura</i> , <i>Ascaris</i> species, Hookworm	14	4	0
	1704-3	<i>Cryptosporidium</i> species	18	0	0
July 4, 2017	1707-1	<i>Ascaris</i> species <i>Blastocystis hominis</i> /species	18	0	0
	1707-2	<i>Schistosoma mansoni</i> <i>Giardia lamblia</i> <i>Blastocystis hominis</i> /species <i>Entamoeba hartmanni</i> <i>Endolimax nana</i>	14	4	0
	1707-3	no ova and/or parasites seen	18	0	0
October 2, 2017	1710-1	<i>Entamoeba histolytica</i> /dispar <i>Blastocystis hominis</i> /species	17	1	0
	1710-2	<i>Blastocystis hominis</i> /species <i>Endolimax nana</i>	18	0	0
	1710-3	<i>Dientamoeba fragilis</i> <i>Blastocystis hominis</i> /species	17	1	0
Total			132	10	0

BOLD – pathogen

Blue – potential pathogen

## TRICHOMONAS VAGINALIS ANTIGEN PROGRAM

CMPT launched the *Trichomonas vaginalis* Antigen Program with the first shipment on August 8, 2011. The program consisted of 2 surveys in 2011. Since 2012, the number of surveys was increased to 3. Each survey consists of 4 samples which are designed to be used with any *Trichomonas vaginalis* test kit or detection method.

Grading is based on a 2 point scale (acceptable or unacceptable). Table 1 lists the samples and grades received for the 2017 challenges.

Table 1 - <i>Trichomonas vaginalis</i> Antigen Challenges 2017					
Date	Sample	Results	Acceptable	Unacceptable	Ungraded
April 10, 2017	1704-1	positive	37	2	0
	1704-2	positive	38	1	0
	1704-3	negative	38	1	0
	1704-4	positive	38	0	0
July 4, 2017	1707-1	negative	38	1	0
	1707-2	positive	31	8	0
	1707-3	positive	39	0	0
	1707-4	negative	39	0	0
October 2, 2017	1710-1	positive	38	0	0
	1710-2	positive	38	0	0
	1710-3	positive	38	0	0
	1710-4	negative	38	0	0
Total			450	13	0



## SHIGA TOXIN PROGRAM

CMPT launched the Shiga Toxin Program with the first shipment on May 7, 2012. The program consists of 2 surveys and each survey consists of 3 simulated stool samples.

Grading is based on a 2 point scale (acceptable or unacceptable). Table 1 lists the samples and grades received for the 2017 challenges.

CMPT acknowledges, with appreciation, the essential advisory and technical support of Denise Sitter, Cadham Provincial Laboratory, Winnipeg, MB.

<b>Table 1 - Shiga Toxin Challenges 2016</b>					
<b>Date</b>	<b>Sample</b>	<b>Results</b>	<b>Acceptable</b>	<b>Unacceptable</b>	<b>Ungraded</b>
<b>May 8, 2017</b>	1705-1	gene and toxin positive	11	0	0
	1705-2	gene and toxin negative	11	0	0
	1705-3	gene and toxin positive	11	0	0
<b>November 6, 2017</b>	1711-1	gene and toxin negative	10	1	0
	1711-2	gene and toxin positive	10	1	0
	1711-3	gene and toxin positive	10	1	0
<b>Total</b>			<b>60</b>	<b>3</b>	<b>0</b>

## 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. Each survey consists of 4 samples for methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* species (VRE) and group B *Streptococcus* (GBS).

In 2017, CMPT expanded the Molecular Proficiency Testing Program to include carbapenem-resistant Enterobacteriaceae (CRE). Because all of the samples can also be tested using screening methods, such as chromogenic media, the program was renamed as 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 1 lists the samples and grades received for the 2017 challenges.

Table 1 - Screening and Molecular Challenges 2017						
Date	Sample		Results	Acceptable	Unacceptable	Ungraded/DNP
April 24, 2017	MRSA	MR 1704-1	positive	19	0	0
		MR 1704-2	negative	19	0	0
		MR 1704-3	negative	18	1	0
		MR 1704-4	positive	19	0	0
	VRE	VR 1704-1	negative	19	0	0
		VR 1704-2	positive (van A)	17	0	2
		VR 1704-3	negative	19	0	0
		VR 1704-4	positive (van A)	17	0	2
	GBS	GB 1704-1	positive	23	0	0
		GB 1704-2	positive	22	1	0
		GB 1704-3	negative	19	4	0
		GB 1704-4	positive	23	0	0
	CRE	CRE 1704-1	positive	11	1	0
		CRE 1704-2	negative	12	0	0
		CRE 1704-3	positive	11	1	0
		CRE 1704-4	negative	12	0	0
Total				280	8	4

DNP – does not process/test

## SCREENING AND MOLECULAR TESTING PROGRAM

Table 1 Screening and Molecular Challenges 2017 cont.

Date	Sample		Results	Acceptable	Unacceptable	Ungraded/DNP
August 14, 2017	MRSA	MR 1708-1	positive	19	0	0
		MR 1708-2	positive	19	0	0
		MR 1708-3	negative	18	1	0
		MR 1708-4	positive	19	0	0
	VRE	VR 1708-1	positive (van A)	16	3	0
		VR 1708-2	positive (van B)	11	4	4
		VR 1708-3	negative	18	1	0
		VR 1708-4	negative	18	1	0
	GBS	GB 1708-1	negative	22	1	0
		GB 1708-2	negative	21	2	0
		GB 1708-3	positive	22	1	0
		GB 1708-4	positive	22	1	0
	CRE	CRE 1708-1	negative	11	1	0
		CRE 1708-2	positive	11	1	0
		CRE 1708-3	positive	11	1	0
		CRE 1708-4	negative	11	1	0
Total				269	19	4

## 2017 - 2018 CMPT PARTICIPANTS

### Distribution of Participant Laboratories

Province/Territory	CM	CT	MY	PA	WA	TR	SC/MO
Alberta	14	10	2	2	6	5	9
British Columbia	23	18	5	9	20	12	12
Manitoba	7	2			2	12	
New Brunswick	4	4				3	1
Newfoundland & Labrador					7		
Nova Scotia	9	8	2	4	2		4
Northwest Territories	1	1			2		
Ontario	1				3	1	
Prince Edward Island	2	2	1	1	1		
Quebec	2	1				1	1
Saskatchewan	13	11	1	2	1	2	5
Yukon	1	1				1	1
International	1				2	1	

**CM:** Clinical Microbiology; **CT:** C. difficile; **MY:** Mycology; **PA:** Enteric Parasitology; **WA:** Water; **TR:** Trichomonas vaginalis; **SCMO:** Screening/Molecular