

## **ANNUAL REPORT 2012 - 2013**

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Innovation • Education • Quality • Assessment • Continual Improvement

## **Clinical Microbiology Proficiency Testing**

— Established 1982 —

ISO 9001:2008 Registration 2002

CMPT, Department of Pathology and Laboratory Medicine

The University of British Columbia

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ISO 9001:2008



ISO 9001

**011977**

## TABLE OF CONTENTS CMPT Annual Report 2012 - 2013

CMPT QUALITY POLICY AND MISSION STATEMENT.....	4
CMPT STAFF.....	4
CMPT COMMUNICATIONS .....	4
CHAIRMAN'S ANNUAL REPORT .....	5
Goals and Objectives 2011-2012 .....	12
Goals and Objectives 2012-2013 .....	13
Goals and Objectives 2013-2014 .....	13
COMMITTEE MEMBERS 2012-2013.....	14
CLINICAL BACTERIOLOGY PROGRAM .....	15
Clinical Bacteriology Histograms .....	16
WATER MICROBIOLOGY PROGRAM .....	23
Water Microbiology - Challenge Records for 2012 .....	24
Water Microbiology Histograms .....	25
MYCOLOGY PROGRAM .....	29
ENTERIC PARASITOLOGY PROGRAM .....	30
TRICHOMONAS VAGINALIS ANTIGEN PROGRAM .....	31
SHIGA TOXIN PROGRAM .....	32
MOLECULAR TESTING PROGRAM .....	33
CMPT PROGRAMS' PARTICIPANTS 2012 - 2013 .....	34

## CMPT QUALITY POLICY AND MISSION STATEMENT

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

- We, at CMPT, are a university based, peer directed program, and we strive to provide Innovative External Quality Assessment committed to education and continual improvement for the benefit of healthcare, our participants, and our programs.
- CMPT is committed to its Quality Management System, and regular review for continual improvement of its effectiveness.
- 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  
August, 2013

## 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  
**Suhanya Bhuvanendran, BMLSc, CLQM** .....Technologist and Web Manager  
**Veronica Restelli, MSc** .....Editor

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.

**Sandy Liu**, Director, Human Resources and Administration.

## CMPT COMMUNICATIONS

CMPT recognizes that good communication with the programs' participants and general public interest in quality assessment are essential for the success of a program like ours.

### CMPT'S WEBSITE

[www.cmpt.ca](http://www.cmpt.ca)

Our website provides access to on-line data entry, preliminary and final results and challenge critiques for all programs.

Program information, shipping dates, and access to the newsletter and annual reports can also be found in our website.

## CONTACT CMPT

### By mail:

Room G408, 2211 Wesbrook Mall  
Vancouver, BC, V6T 2B5, Canada

### By phone:

- Telephone: 604-827-1754 or (toll free) 1-866-579-CMPT (2678)
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### By e-mail:

**CMPT Coordinator:** [info@cmpt.ca](mailto:info@cmpt.ca)

## CHAIRMAN'S ANNUAL REPORT

### CMPT Program

UBC's Clinical Microbiology Proficiency Testing program, now with 30 years of experience and expertise, has long benefited through its focus on quality, adaptation, and continual improvement. This past year, starting in 2012, has been one with much change. We can now look back with pride in our success.

### 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 them. 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, Suhanya Bhuvanendran, technologist and web manager, and Veronica Restelli, our writer and editor and laboratory technologist. My hat is off to the whole group for pulling together.

### CMPT location

In the spring of 2013, we were able to move from our location in the Heather Pavilion to a new site in the UBC Hospital on the campus of University of British Columbia.

While there were some advantages to the former location, such as being close to Vancouver General Hospital and BCCDC, it was clearly time for us to find another site, where the physical space would not hinder our work and progress. There are clearly benefits to our new space since it was initially a microbiology laboratory with well-designed and located solid benches, and wash-up spaces. While it had been only lightly used over the last few years, it was fully maintained and was essentially ready for us to move in with only some minor alterations required. Importantly, it is in proximity to the main offices at UBC which allows better communication.

My hat is off to our CMPT staff that, through organization and talent, was able to make the transition without any disruption to the CMPT program or client laboratories. I want to thank all those from UBC Pathology and Laboratory Medicine, and the UBC Faculty of Medicine's Dean's Office who worked with us and helped make this move possible.

### 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 contribution of our committee members; we receive the benefit of their time, knowledge, and expertise, all of which is greatly appreciated.

Last year was a major transition year. CMPT implemented a new committee renewal process where individuals who had been on the committee for a very long time were given the opportunity to step down. Dr. Deirdre Church from Alberta, Beverly Borgford from Saskatchewan, and Dr. Michelle Alfa from Manitoba have stepped down this last year; I thank them for all they have contributed to CMPT.

Joining the committee are Dr. Titus Wong, from Vancouver, Dr. Wilson Chan from Alberta, and Dr. James Karlowsky from Manitoba. Welcome.

Dr. Robert Rennie is stepping down as the committee chair of the Clinical Bacteriology committee after serving in that position for 10 years. Dr. David Haldane has agreed to take on the chair's role and responsibilities.

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

### Quality Management and ISO Certification

Once again, CMPT was successfully audited by SAI Global and we maintained our certification to ISO 9001:2008. We continue to be the only medical laboratory proficiency testing program in North America to seek certification to ISO 9001:2008. We note that one Canadian program has recently been accredited to ISO 17043:2010 'Quality for proficiency testing schemes' and we congratulate them on their success.

In the previous year, we were found to have had our first non-conformity in 9 years, due to the absence of a documented internal audit (It was done, but insufficiently recorded). The deficiency

## CHAIRMAN'S ANNUAL REPORT 2012 - 2013

was immediately amended. This year we had no non-conformances and it is our goal to remain non-conformance free for every year going forward.

There continue to be reasons for us to consider official recognition to ISO 17043:2010: "Conformity assessment - General requirements for proficiency testing". At this point, it is significant that CMPT participants see our ISO Certification to ISO 9001:2008 as providing value and competence, thus, there is not an urgency to be assessed against the new standard. That being said, we ensure that, at all times, our technical and quality control activities embrace all the requirements of ISO 17043:2010.

CMPT is also interested in pursuing recognition of business excellence through the Canadian national program Excellence Canada. The excellence model addresses Quality and Innovation and is comparable to international programs, such as the US Malcolm Baldrige Award. Discussions have been held with Excellence Canada. It is our goal to maintain our ISO 9001:2008 certification status and to apply for Bronze and Silver level with Excellence Canada.

During 2012-2013, CMPT did not work with the CMPT Reliability Calculator' as one of our measures for production Quality which will resume in the year to follow.

### Opportunities for Improvement

CMPT has maintained an ongoing OFI table since it was first registered. During the last year additional issues were identified. Without going into detail, several were due to slips or simple mistakes. The underlying factor for these was the very high levels of busyness through the year. We are in the process of addressing these issues.

### Management Review of our Quality System

As part of the annual process our Strategic Quality Plan was reviewed. This year, changes were made within our Terms of Reference (SQP003) to reinforce our commitment to water bacteriology and to laboratory safety, and within our definition of Annual General Meeting (see below) and the member structure of our committees.

We also refined our Quality Control routine to ensure that our last check, especially for samples produced for other programs, would be made *before* the samples are shipped out. With

reference to the non-conformance noted above regarding the internal audit, our policy has been restated that it is the responsibility of top management to perform and document internal audits.

### Management Review of Resources

CMPT relies on the revenues generated through cost recovery, personnel, and our site. With respect to finances, CMPT again had a short term deficit which has been significantly addressed over the last year. A review has indicated this was due to decreasing revenues from continued laboratory consolidation rather than increasing expenses. The solution has been to increase revenue through the provision of additional services.

### Management Review of Continuing Education

CMPT is committed to providing opportunities for our staff to participate in education opportunities. During this year, we had two significant meetings in Vancouver. Next year we will again have the AMMI-Canada / CACMID meeting in British Columbia. It is our goal to have a presence at this meeting.

### Ungraded samples

Over the years, CMPT sample grading has become increasingly complex. Some challenges may be both verified by quality control and validated by reference laboratories, but will still have elements ungraded because of certain laboratories' practices. The CMPT committee is con-

**Table 1.** Ungraded samples 2000 - 2013

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

## CHAIRMAN'S ANNUAL REPORT

cerned when samples are found completely unacceptable for assessment. These ungraded samples are monitored year over year. While our goal is to have zero ungraded samples, our objective is to maintain the annual level at no greater than three.

In 2012-2013 we had 3 samples that could not be graded due to artifacts (Table 1).

### Management Review of Customer Satisfaction

In 2012-2013, CMPT performed a satisfaction survey focused on the use of CMPT program as part of the laboratory's Quality Management program.

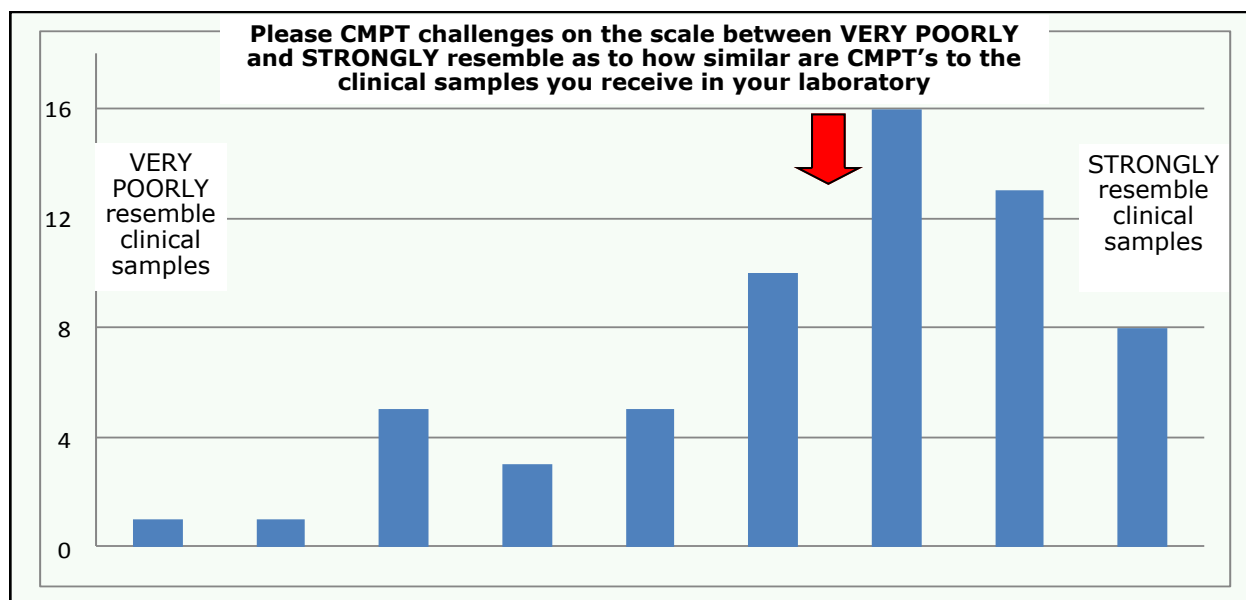
The survey was performed as a voluntary electronic survey using SurveyMonkey.com. The survey complied with our rules for optimal survey participation and obtained a 35% response rate. The distribution of responses was consistent with our geographic and complexity norms thus we considered the survey as reliable for evaluation.

There were several key observations:

1. There is a sufficiently strong resemblance between CMPT samples and clinical samples to be used for competency testing assessment (figure 1).
2. Seventy-five percent of laboratories find that when they investigate CMPT errors, they will find systemic errors (major and minor) that also affect clinical testing results. This serves as a strong reminder of the clinical value of performing proficiency testing (figure 2).
3. CMPT critiques are valuable for adding to the laboratories' continual improvement program. Without showing information, the value of CMPT critiques was recognized by all laboratory categories (figure 3).
4. The majority of laboratories rate CMPT as very good or better as a proficiency testing program (figure 4). That being said, we are aware of those with a lesser view. It is our goal to work with these laboratories and to the best of our efforts, sort out and address their concerns.

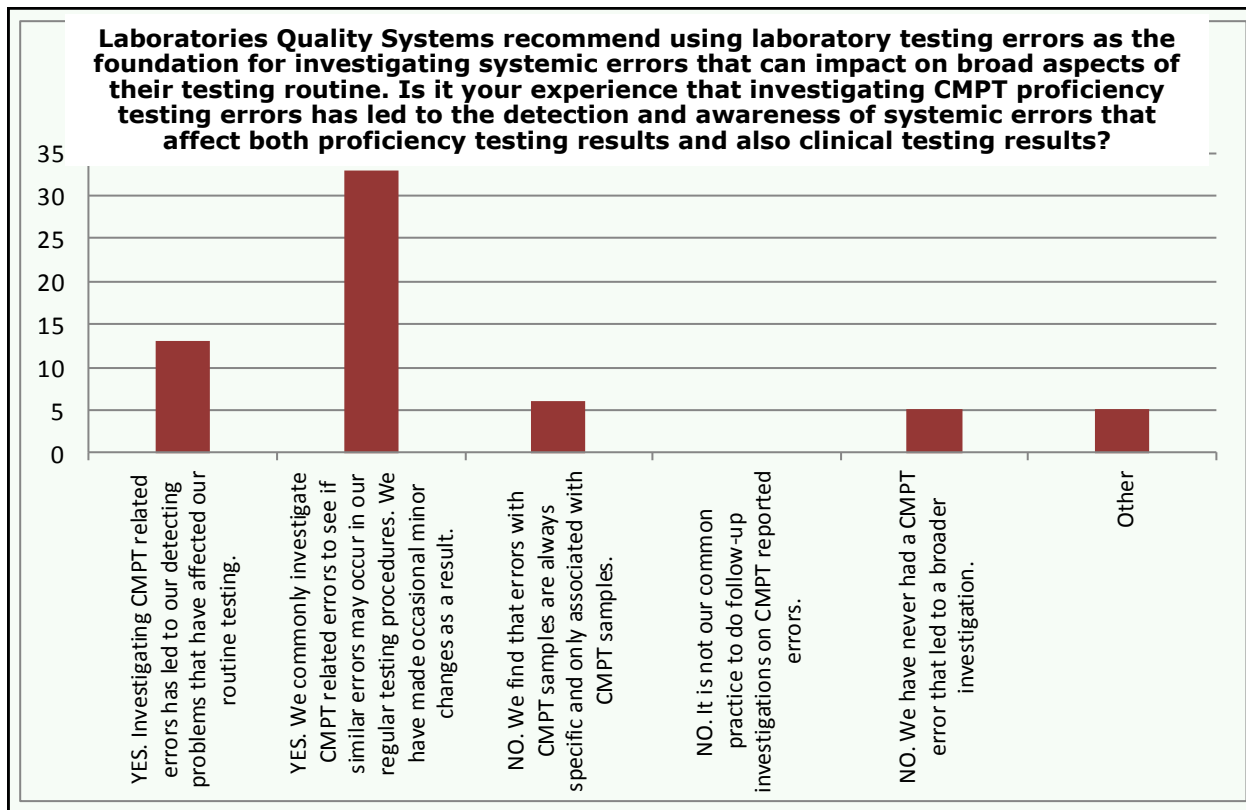
Those things being said, there were two important opportunities for us to improve. Many participants do not find our CMPT Newsletter articles or our CMPT Annual Report especially helpful for education or improvement (figures 5 and 6).

This is particularly problematic because we have made efforts to increase the educational value of both with special reference to CMPT Connections. Clearly, if continual improvement and education are valued targets for CMPT, we will need to redouble our efforts. From electronic monitoring, it appears that the Annual Report is not particularly well read. This is disappointing because CMPT sees the Annual Report not only as an

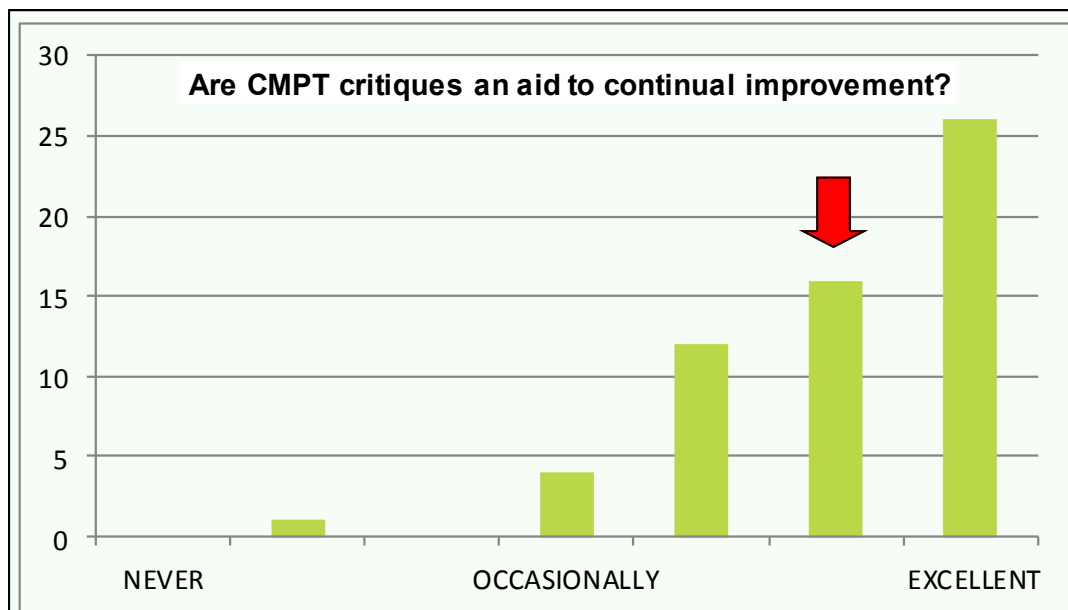


**Figure 1.** CMPT's samples resemblance to clinical samples. Arrow: rating value

## CHAIRMAN'S ANNUAL REPORT



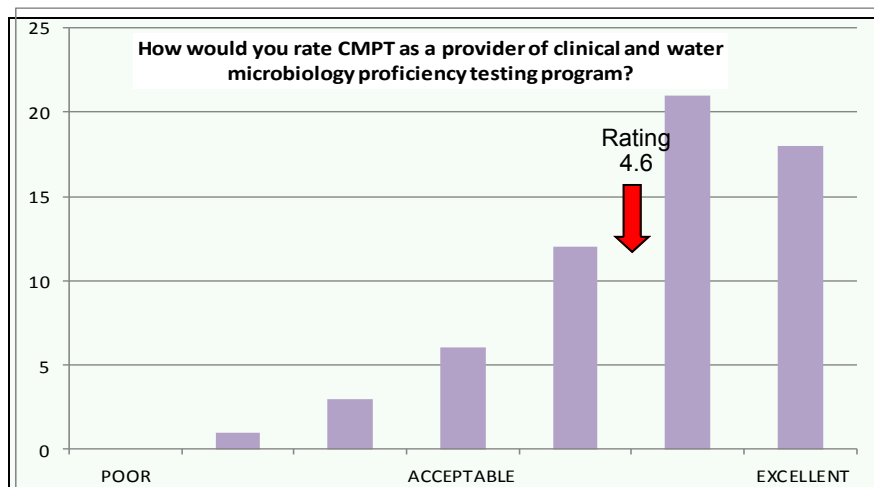
**Figure 2.** PT errors as a tool to investigate systemic errors affecting clinical results



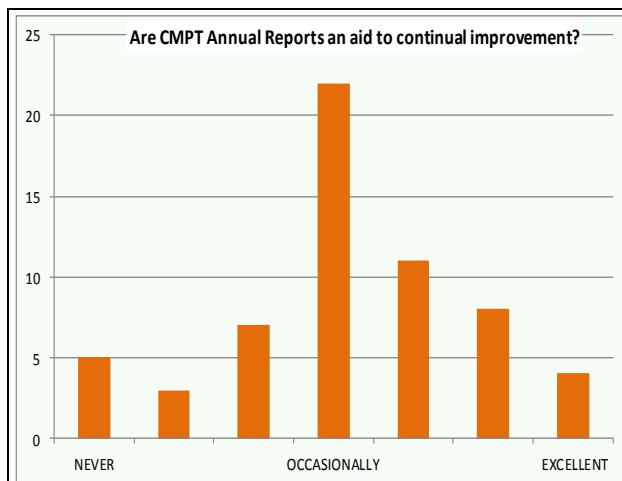
**Figure 3.** CMPT critiques as an aid to continual improvement . Arrow: rating value.



## CHAIRMAN'S ANNUAL REPORT



**Figure 4.** Overall rating of CMPT as PT provider.



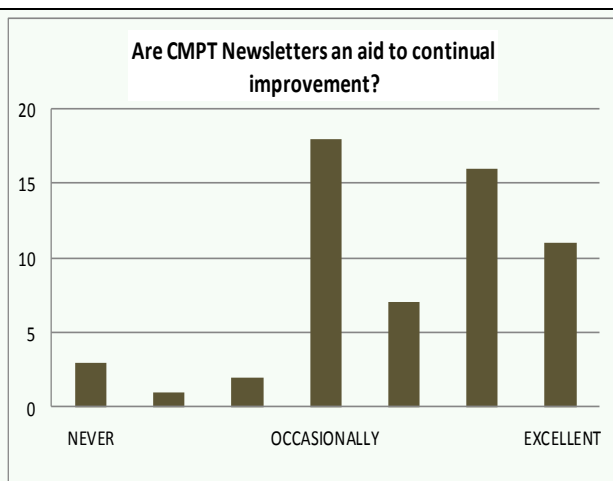
**Figure 5.** CMPT's Annual Report as an aid to continual improvement

obligation, but also as a source of information. We shall focus some attention on the Annual Report to see if we can improve its perceived value.

Overall the survey indicated continued strong support for CMPT with a rating greater than 86 percent overall satisfaction.

### CMPT Composite Satisfaction Score (CSS)

Each year CMPT combines the information from the surveys with other factors (contacts, complaints, consultations) and derives a weighted composite score Customer Satisfaction, which we have been monitoring for 11 years. Negative



**Figure 6.** CMPT's Newsletter as an aid to continual improvement

comments, lost contracts, and complaints, are weighted greater than its positive counterparts.

In 2012-2013, CMPT had new contracts, no lost contracts, and no complaints which, added to the negative comments received in the survey, our CSS reached a value of 98, which we interpret as a strong positive year.

Figure 7 indicates our CSS pattern for the past 11 years. The trend appears to correlate well with our financial health. In this graph, values below 84 would be of concern. Values above 97 are considered as excellent. We consider this year's results indicative of a strong positive year.

## CHAIRMAN'S ANNUAL REPORT

### CMPT Outreach Education

CMPT had two international delegations scheduled to participate in our International EQA Programs in 2012 – 2013, one from Zimbabwe and one from Saudi Arabia. The delegate from Zimbabwe was able to attend the program in the summer of 2013, and the delegates from Saudi Arabia will be participating in the spring of 2014. This program continues to be seen as a valued experience. Discussions are currently underway for additional groups to participate in 2013-2014.

### CMPT Presentations and Publications

- Performance of Canadian Laboratories with Gram Stain EQA. Katholic University of Leuven. Leuven Belgium. April 2012
- Providing on-line education: a Quality benefit. Katholic University of Leuven. Leuven Belgium. April 2012
- Laboratory Quality in Canada and the role of the Canadian Standards Association. Canadian Society for Clinical Chemistry. Quebec City. June 2012.
- Quality Control and Quality Management. Back to Basics video Series. BC Society for Laboratory Sciences. September 2012.
- Counting the Costs of Poor Quality. National Society for Histopathology. Vancouver BC. October 2012

- Hidden values of Proficiency Testing. Laboratory Quality Confab. San Antonio Texas. November 2012.
- Modern Tools for Laboratory Quality including Social Media. BCSLS Teleconference Series. November 2012.
- Risk and the Medical Laboratory. CACMID and AMMI-Canada Quality Seminar. Quebec. April 2013.

### CMPT and Strategic Planning

CMPT continues to function consistent to its Mission and Vision statements. Our long term objectives continue as iterated in our Mission 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.

### • Workload

While we were able to continue operating during one staff member's leave, without bringing in a part time replacement, we found that in the long run, this is not a viable strategy as it was noted in the increases of OFIs associated with slips. For CMPT to consider increasing manpower, we will need to attract long term external funding on a more aggressive basis.

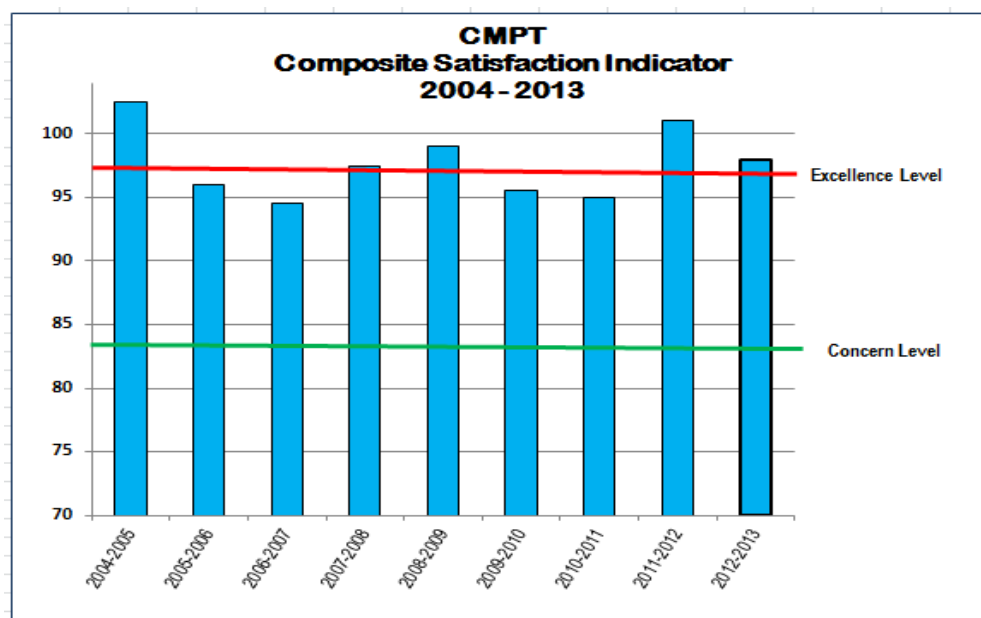


Figure 7. CMPT's Composite Satisfaction Indicator since 2004

## CHAIRMAN'S ANNUAL REPORT

We have been able to capitalize on the research and development for prolonged storage times for certain samples and materials. This has already found benefit in sample preparation. Importantly, it points to the value of focussed continued research and development. Focussed R&D needs to be supported and sustained.

### • Financial resources

Through good fiscal management and the efforts of all our staff, in particular Esther Kwok, our co-ordinator, we have eliminated our deficit. This is an important step forward. We recognize that we cannot control laboratory consolidation. It is important that we continue to be recognized as an added-value program provincially, nationally, and internationally.

### • Space

Having made our move to UBC Campus, this will take a lot of pressure off the problems associated with environmental contamination. We envision that the space we have is stable at least for the next 5 years.

### • Equipment

CMPT has maintained most of its equipment in working order for over 20 years, but concern is rising, and we recognize that some equipment need to be replaced. During this year we have added a new Biological Safety Cabinet and during the next year we will need to upgrade our centrifuge, leaving our current machine for back-up purposes.

### • Enteric sample suppliers

CMPT has focused the quality of its program in large part on the production and provision of challenge samples that closely simulate typical clinical samples. For many of our samples, we have the unique knowledge on how to produce these simulated samples internally. Other samples such as enteric parasitology samples, this is more difficult.

This year, we have found an additional laboratory prepared to assist us with providing anonymous samples for quality assurance purposes and continue to have access to samples from an academic centre at commercial rates. We continue to look nationally and internationally for additional resources.

### • Partnerships

CMPT currently benefits from its partnership with our sister programs, the Program Office for Laboratory Quality Management, and the Canadian Immunohistochemistry Quality Control program.

CMPT has developed new partner relationships with the Canadian EQA Laboratories (CEQAL), the Oneworld Accuracy network, and with the Department of Global Health, University of Washington. CMPT also works in conjunction with Standards Council of Canada and the Canadian Standards Association and the International Organization for Standardization. In addition, we continue to meet and work with the international EQA community around the world.

### • Research

CMPT has, over the years, 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.

Led by Caleb Lee, we have developed strategies that significantly extend the shelf and transport life of samples and created more realistic sample simulations. This program will continue.

### • Committee structure

CMPT is highly appreciative of all the people that so generously volunteer their time to sit on our area committees, participate in the discussions related to grading and critiques development, and contribute to CMPT Connections.

It is also understandable that after participating for many years, a level of writing and contributions fatigue can set in. While we have had committee members change on a fairly regular basis, most of this has been as a result of other work commitments or other plans.

CMPT has not had a policy of encouraging new members to participate. This has resulted in a group of people highly knowledgeable about proficiency testing as it is practiced in Canada. It has also created an increased level of risk with respect to a more organized progress to succession. It is therefore necessary that CMPT considers some restructuring of committee membership.

## CHAIRMAN'S ANNUAL REPORT

It is proposed that over the next 2 years, CMPT will start a program to gradually replace committee members who have served on CMPT committees for over 12 consecutive years, keeping in mind the importance of maintaining geographic and professional balances that have made our committees so successful.

### • CMPT Publications

The cornerstone of CMPT's value as a continuing education provider is its publications. While our CMPT critiques continue to thrive, we have some ground to make up with CMPT Connections and the Annual Report.

CMPT Connections is viewed by us as a vehicle for allowing members to share their opinions

and information, available to a wide national and international readership, without necessarily all the rigours of the traditional full peer review process.

Unfortunately we have allowed the authorship to drop dramatically, which puts a lot of pressure on the editor. In the past we have invited committee members to write manuscripts with some success, but not sustainable success. It is necessary for us to develop a new strategy to expand authorship.

On a similar note, the recent survey indicates that the current view of the Annual Report does not perceive a lot of continuing education value. This too needs change.

## GOALS and OBJECTIVES 2011-2012

CMPT Goals and Objectives are classified as P (program) or Q (quality). CMPT continues to maintain its long term goals to be a consistent, reliable, innovative provider of external quality assessment services and education.

Consistent with that Goal, last year CMPT proposed the following objectives:

P11_1	Continued work on Enteric Parasitology sample sources	Successful and Ongoing
P11_2	Develop and Introduce effective time efficiencies in production and assessment of challenges	Successful and Ongoing
P11_3	Remove current financial deficit in 2 years	Successful
P11_4	Increase Microbiology content in CMPT Connections.	Ongoing
P11_5	Work within the Department of Pathology and Laboratory Medicine (PaLM) to ensure appropriate space.	Successful and Completed
P11_6	Define and operationalize opportunities with new partners.	Completed and Ongoing
Q11-1	Meet ISO9001:2008 certification without non-conformances.	Completed successfully

## CHAIRMAN'S ANNUAL REPORT

### GOALS and OBJECTIVES 2012-2013

P12_1	Continued work on Enteric Parasitology sample sources (critical)	Successful and competed
P12_2	To develop new research strategies with graduate student(s)	Graduate student now working on a project.
P12_3	Continue to increase Microbiology content in CMPT Connections	Needs additional attention
P12_4	Prepare to move to new quarters	Completed
Q12_1	Meet ISO 9001:2008 certification without non-conformances.	Successful completion
Q12_2	To explore possible relationship with Excellence Canada.	Exploration Complete.

As can be seen in the above tables, we have successfully met our goals for the last 2 program years.

### GOALS and OBJECTIVES 2013-2014

P13_1	Continue to increase Microbiology content in CMPT Connections.
P13_2	Maintain our fiscal status
P13_3	Purchase new centrifuge.
P13_4	Develop strategy for additional staff member
P13-5	Increase awareness of all programs with the view to increase total participation rate by 5 percent
P13-6	To develop a new format for the Annual Report with the goal to improve its perceived value.
P13-7	Increase authorship with CMPT Connections
Q13_1	Meet ISO 9001:2008 certification without non-conformances.
Q13_2	To start relationship with Excellence Canada seeking Bronze and Silver Level achievement before the end of 2015.

Signed



Michael A Noble  
Chair, CMPT  
September 24, 2013

## COMMITTEE MEMBERS 2012 - 2013

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  
Joe Fung, BSc MPH .....BCCDC Environmental Microbiology, Vancouver, BC

### Mycology Program

Robert Rennie, PhD FCCM, D(ABMM) .....University of Alberta Hospital, Edmonton, AB  
Romina Reyes MD FRCPC .....LifeLabs, Burnaby, BC  
Jeff Fuller FCCM, (D) .....University of Alberta Hospital, Edmonton, AB

### Enteric Parasitology Program

Tara Bonham RT .....BC Biomedical Laboratories, Surrey, BC  
Sylvie Champagne, MD FRCPC .....St. Paul's Hospital, Vancouver, BC  
Joan Tomblin, MD FRCPC .....BC Biomedical Laboratories, Surrey, BC  
Quantine Wong, BSc .....BCCDC Laboratory, Vancouver, BC

### Clinical Bacteriology Program

Robert Rennie, PhD FCCM, D (ABMM) .....University of Alberta Hospital, Edmonton, AB  
Michelle Alfa, PhD FCCM .....St. Boniface General Hospital, Winnipeg, MB  
Beverley Borgford, ART .....Yorkton Regional Hospital, Yorkton, SK  
Deirdre Church, MD PhD FRCPC .....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  
Vicki Krell, ART (CM) .....Abbotsford Regional Hospital, Abbotsford, BC  
Paul Levett PhD (D)ABMM FAAM .....Saskatchewan Disease Control Laboratory, Regina, SK  
Diane Roscoe, MD FRCPC .....Vancouver General Hospital, Vancouver, BC  
Denise Sitter, ART .....Cadham Provincial Laboratory, Winnipeg, MB  
Beverley Miller, MLT .....Calgary Laboratory Services, Calgary, AB  
Tammie Wilcox-Carrier, ART .....Moncton Hospital, Moncton, NB  
Titus Wong, MD .....Vancouver General Hospital, Vancouver, BC  
Wilson Chan, MD .....Calgary Laboratory Services, Calgary, AB  
James Karlowsky PhD .....St. Boniface General Hospital, Winnipeg, MB

## 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://www.cmpt.ca/programs\\_clinbact/clin\\_bacteriology\\_overview\\_program.htm](http://www.cmpt.ca/programs_clinbact/clin_bacteriology_overview_program.htm)

### Clinical Bacteriology program 2012 — 2013

In 2012 - 2013, **122** laboratories participated in the clinical bacteriology program, **87** in the Supplemental Gram Smear program, and **63** in the *Clostridium difficile* program.

## HISTOGRAMS 2012-2013

### About the histograms

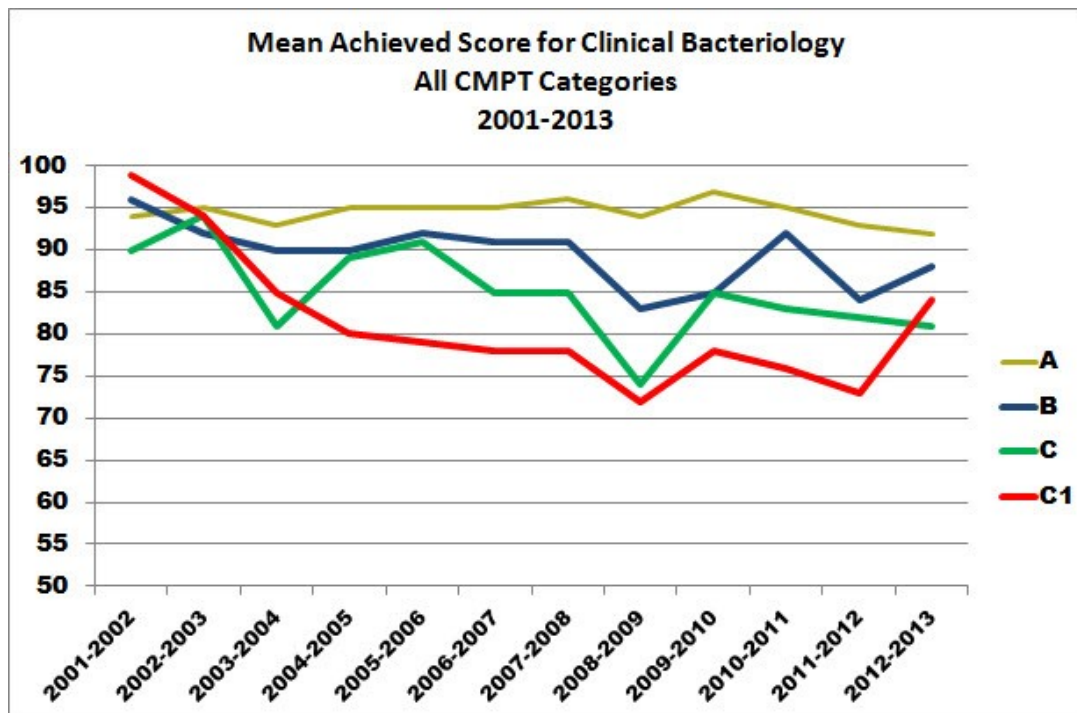
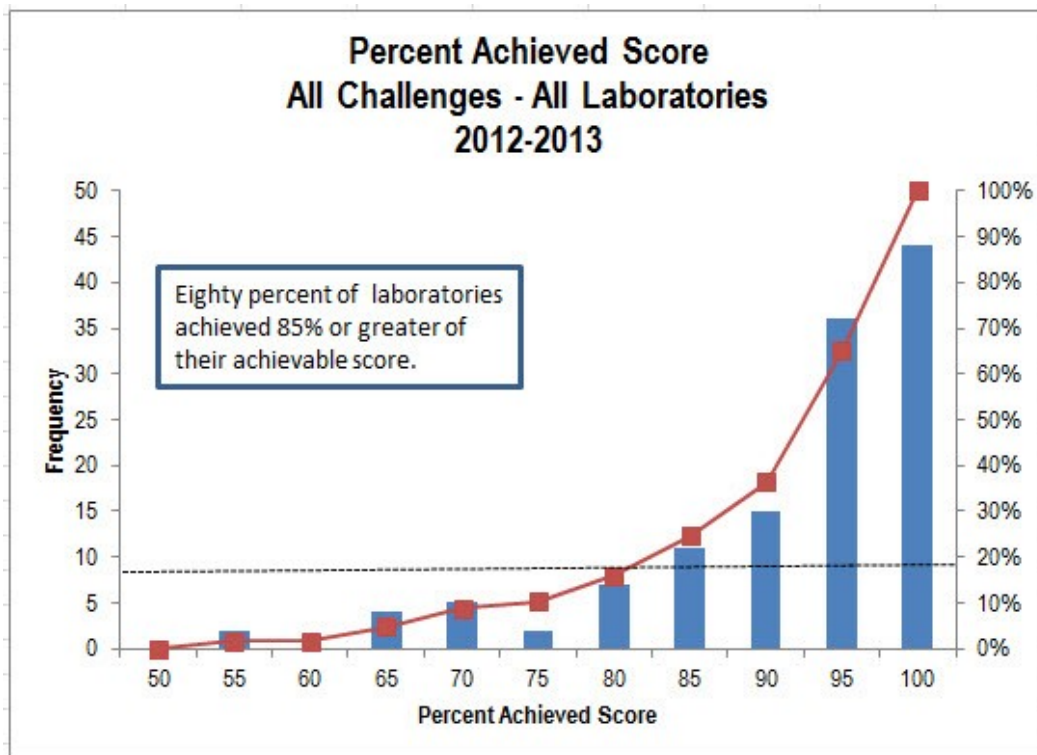
All histograms have been converted to a single format, which is the percent achievable score. For each laboratory, the sum of all challenges performed and graded was calculated, either as a total for all challenges, or within a specific category, such as "bacterial identification". The total achievable 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 getting 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.

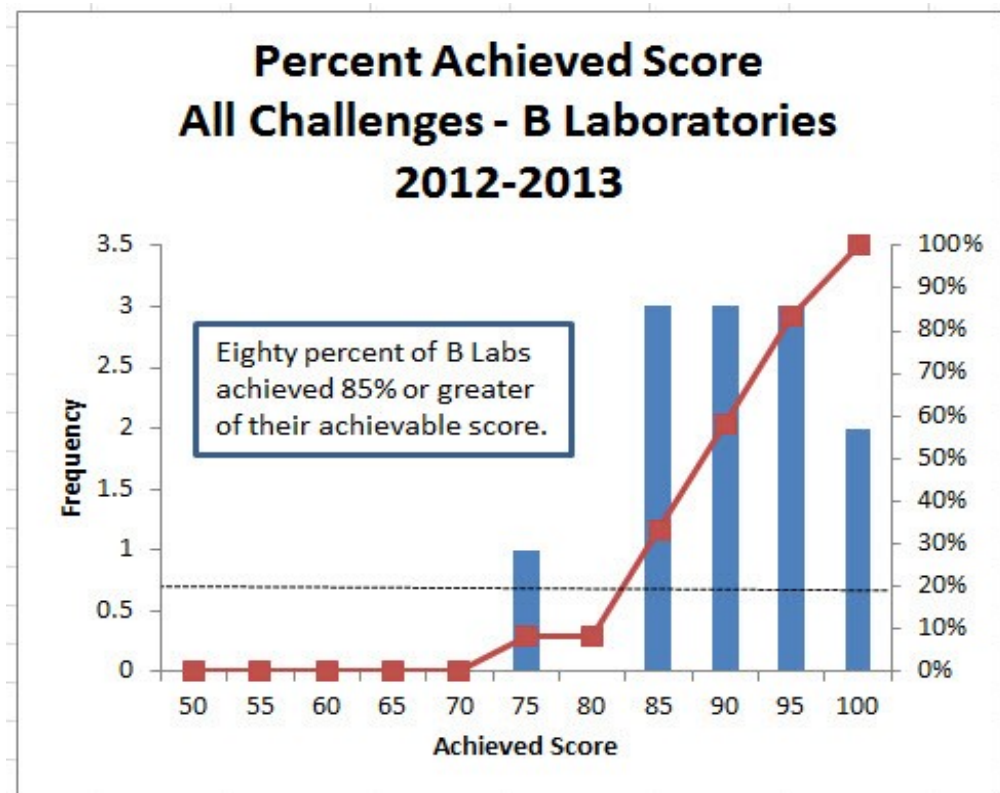
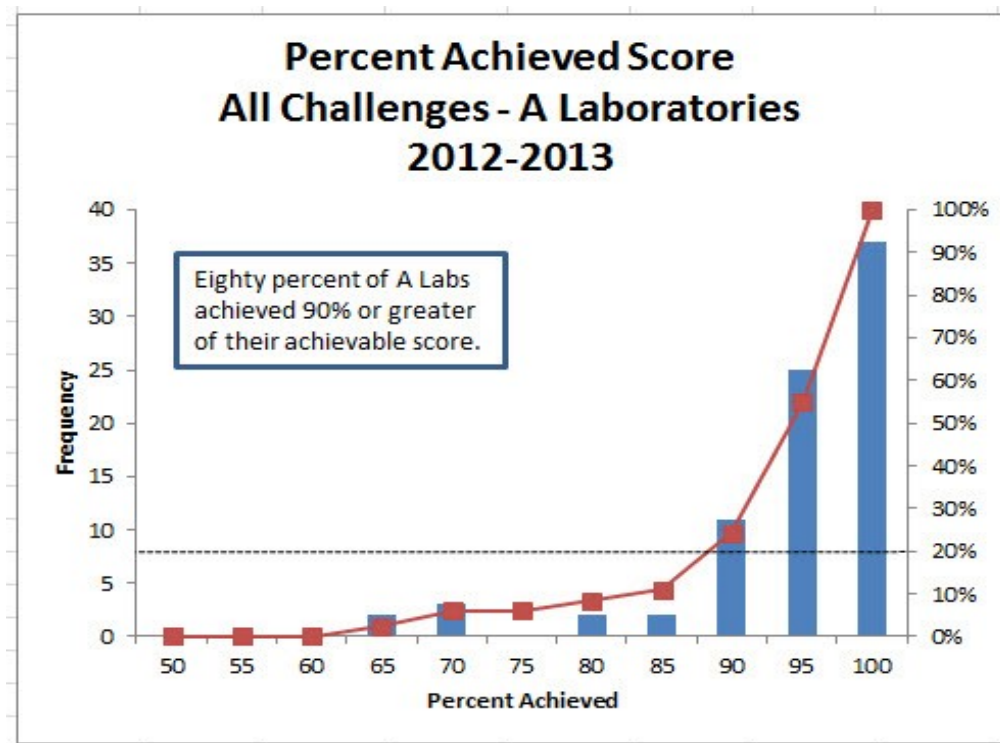
The Cumulative Scoring is indicated by the connected box-line that starts low on the left and rises to the right, and is read on the RIGHT side scale of the chart. The cumulative column indicates that percentage of laboratories that received an acceptable grade on the challenge.

### Clinical Bacteriology - All Challenges - All Laboratories

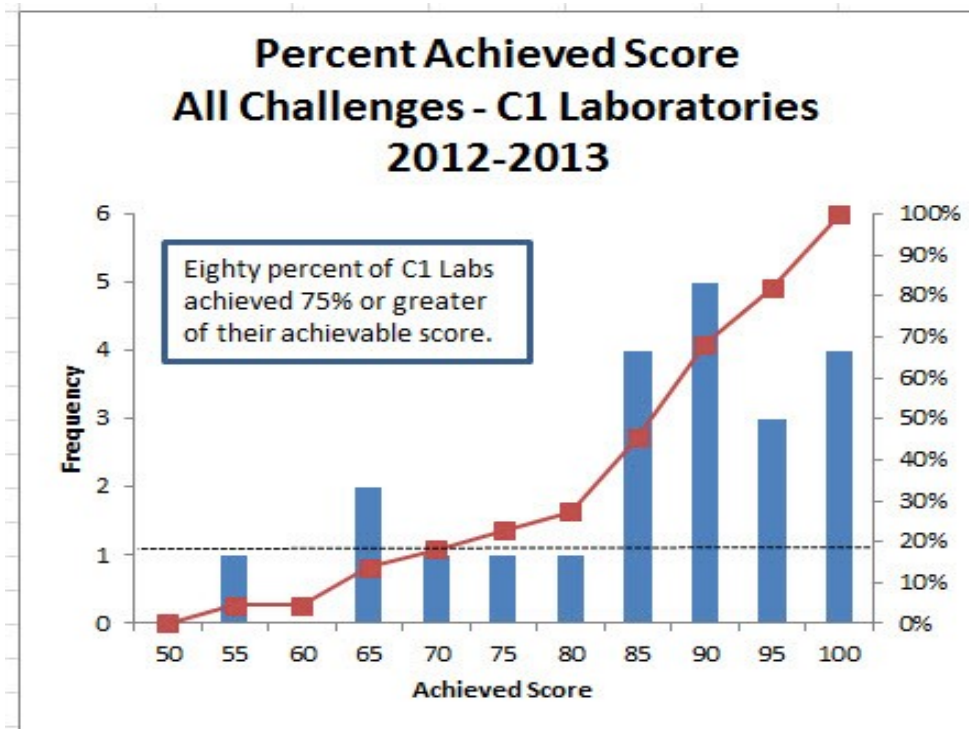
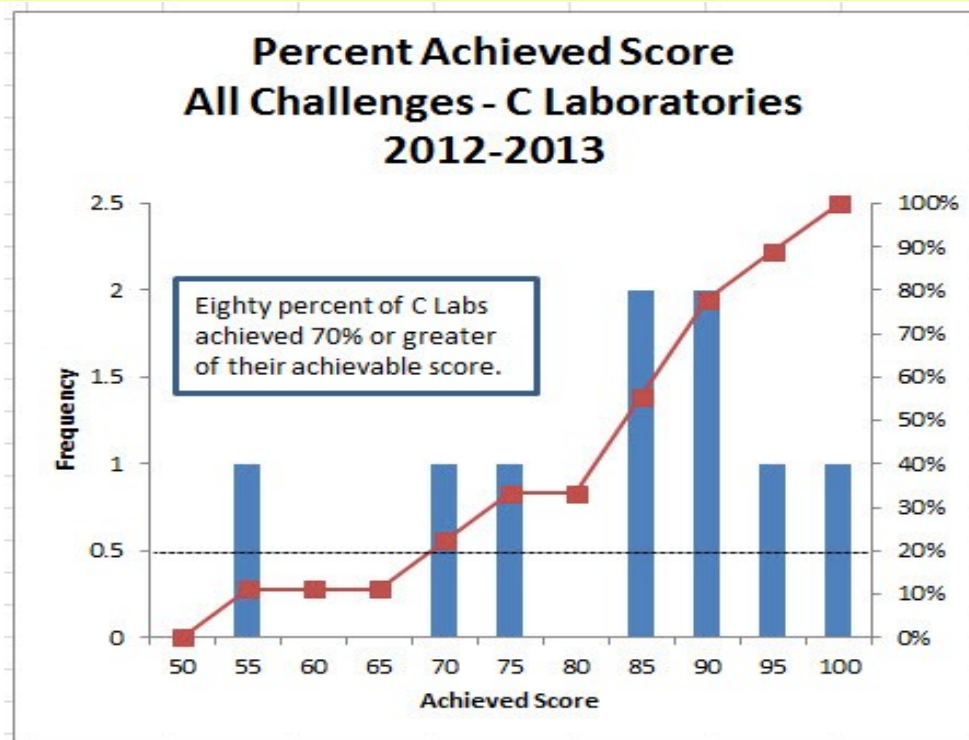




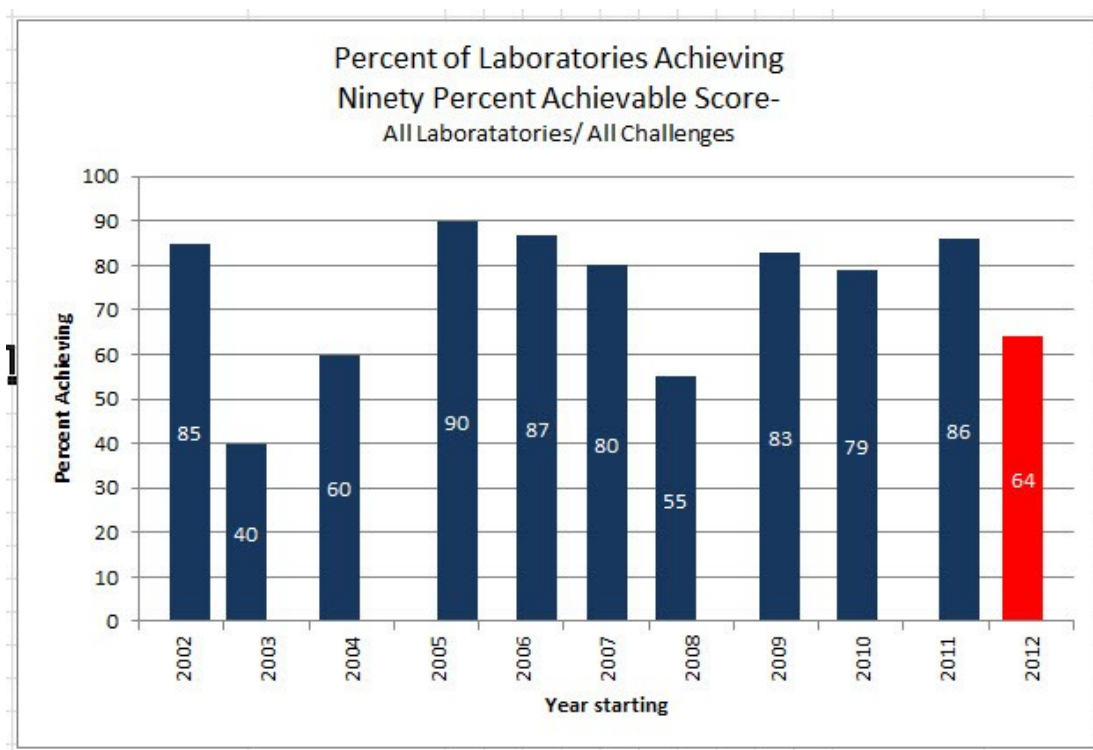
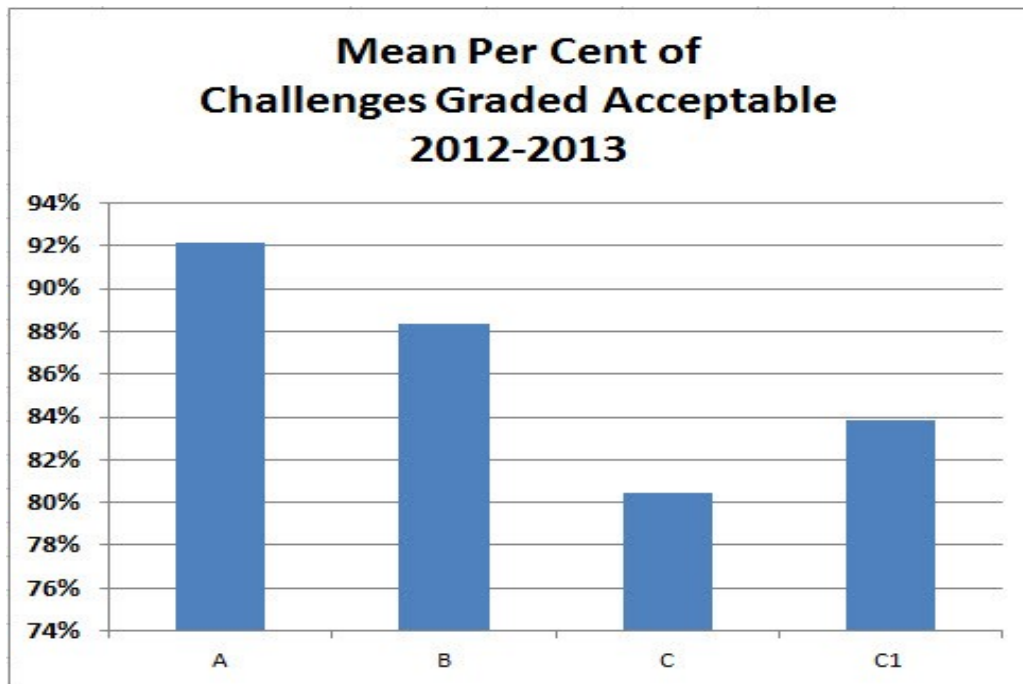
### Clinical Bacteriology - Category A and B Laboratories



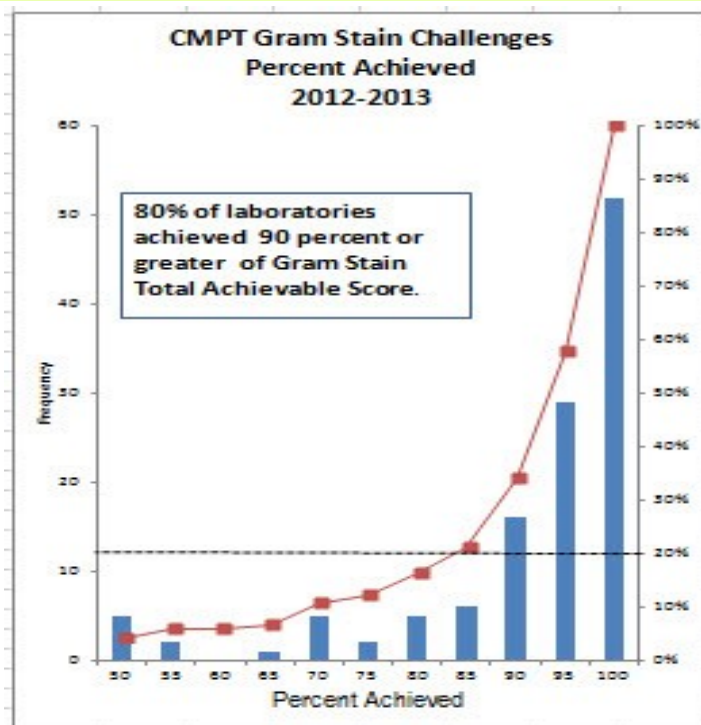
### Clinical Bacteriology - Category C and C1 Laboratories



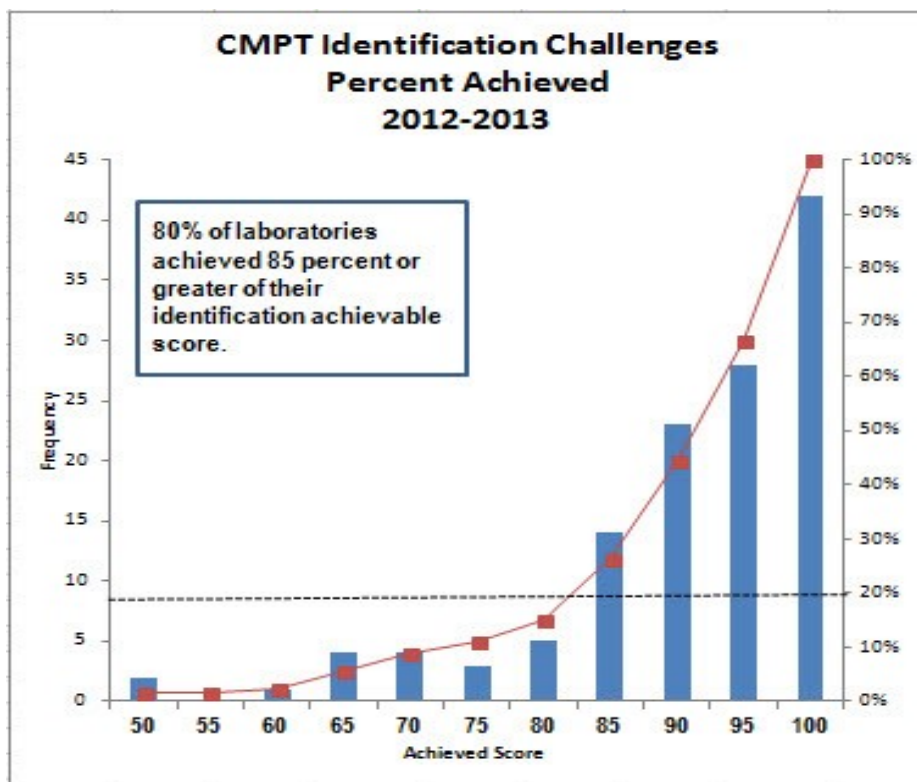
## Clinical Bacteriology - All Laboratories



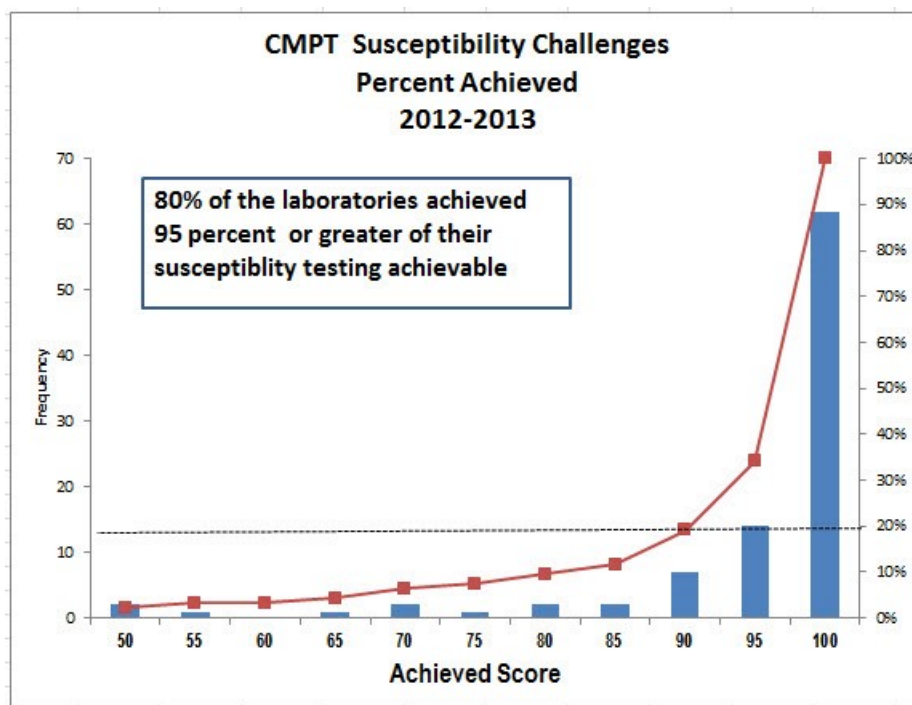
## Gram Stain Challenges - All Laboratories



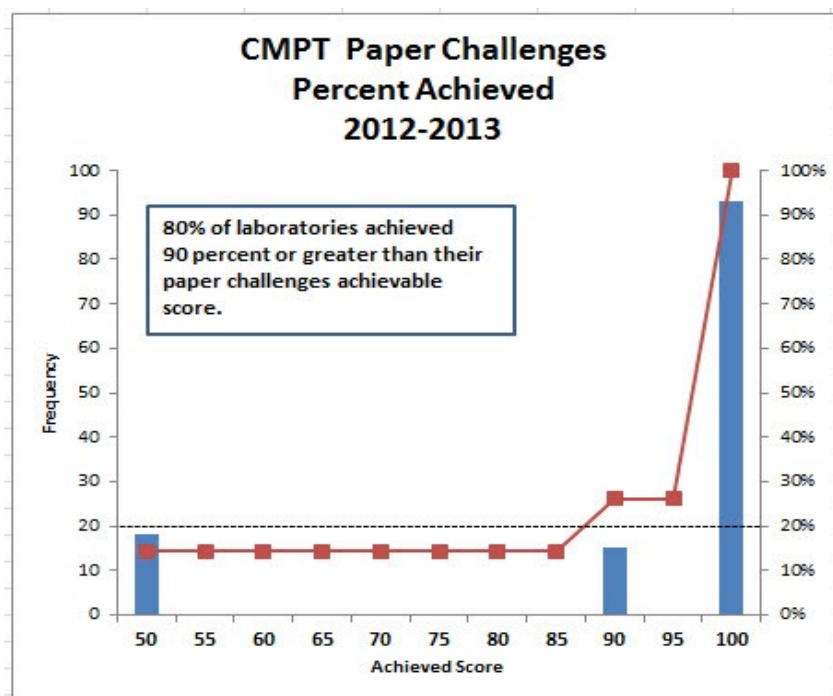
## Identification Challenges - All Laboratories



## Susceptibility Challenges - All Laboratories

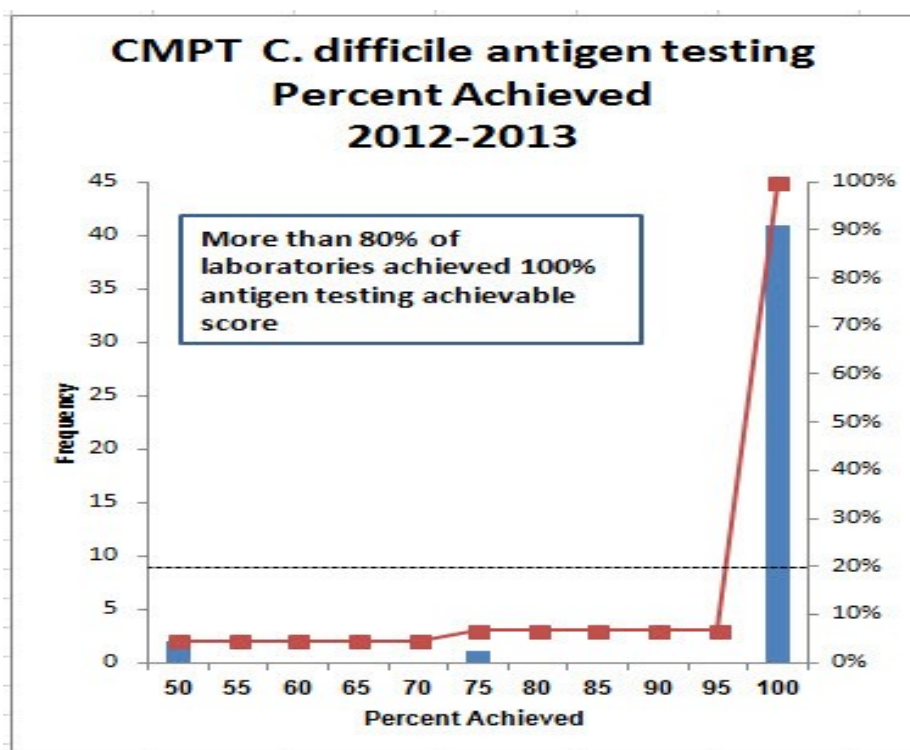
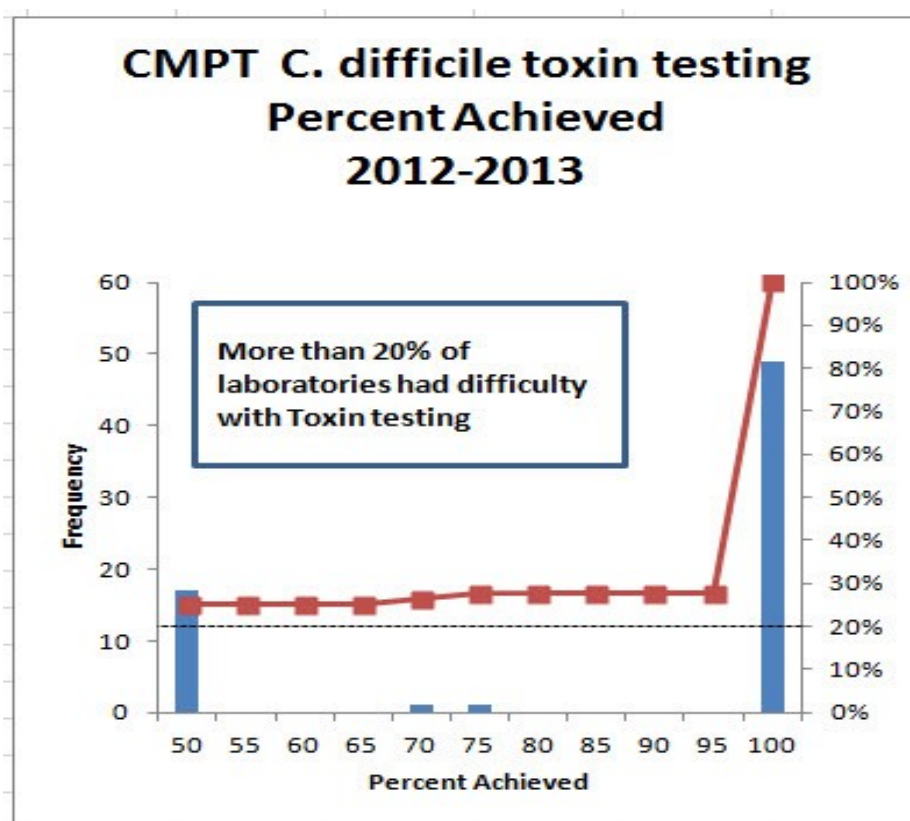


## Paper Challenges - All Laboratories





### *Clostridium difficile* Toxin Detection - All Laboratories



## WATER MICROBIOLOGY PROGRAM

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

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

### Program Overview

Drinking Water challenge surveys are shipped to laboratories three times per year. Each survey consists of sets of 4 drinking water samples. 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).

For a more comprehensive Program Overview and Score system please visit:

[http://www.cmpt.ca/programs\\_water/water.htm](http://www.cmpt.ca/programs_water/water.htm)

### Water Microbiology Program 2012

In 2012, forty-three laboratories participated in the water bacteriology program.

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 2012 are shown in Table 1 and the recreational water challenge records are shown in Table 2.

## WATER MICROBIOLOGY PROGRAM

### Water Microbiology - Challenge Records for 2012

Table 1: Simulated drinking water bacteriology challenge record for 2012									
Date	Sample No.	Organism	Membrane Filtration mean/median 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>
W121 April 16, 2012	1	<i>Escherichia coli</i>	29/30	31/31	33/34	32/34	>23/>23	>23/>23	P/P
	2	no organisms present	0/0	0/0	0/0	0/0	0/0	0/0	A/A
	3	<i>Enterobacter</i> species	63/65	0/0	66/66	0/0	>23/>23	0/0	P/A
	4	<i>Escherichia coli</i>	29/32	30/32	31/32	31/32	>23/>23	>23/>23	P/P
W122 July 4, 2012	1	<i>Enterobacter</i> species	34/33	0/0	42/36	0/0	>23/>23	0/0	P/A
	2	<i>Enterobacter</i> species	31/30	0/0	20/20	0/0	>23/>23	0/0	P/A
	3	<i>Escherichia coli</i>	55/56	55/57	53/56	54/56	>23/>23	>23/>23	P/P
	4	<i>Escherichia coli</i>	52/55	52/50	52/55	57/57	>23/>23	>23/>23	P/P
W123 October 29, 2012	1	<i>Escherichia coli</i>	18/19	18/19	18/17	18/17	19/23	19/23	P/P
	2	<i>Enterobacter</i> species	38/39	0/0	36/36	0/0	>23/>23	0/0	P/A
	3	<i>Escherichia coli</i>	57/61	56/59	61/61	61/61	>23/>23	>23/>23	P/P
	4	no organisms present	0/0	0/0	0/0	0/0	0/0	0/0	A/A

Table 2: Simulated recreational water bacteriology challenge record for 2012				
Date	Source	Challenge	Membrane Filtration mean/median cfu/100mL	Enzyme Substrate mean/median MPN/100 ml
R121 April 16, 2012	Spa Water	<i>Pseudomonas aeruginosa</i>	195/190	N/A
	Freshwater Beach	<i>Escherichia coli</i>	90/81	108/109
	Marine Water	<i>Enterococcus</i> species	205/220	214/222
R122 September 17, 2012	Spa Water	<i>Pseudomonas aeruginosa</i>	123/116	N/A
	Freshwater Beach	<i>Escherichia coli</i>	267/270	377/279
	Marine Water	<i>Enterococcus</i> species	122/121	97/110



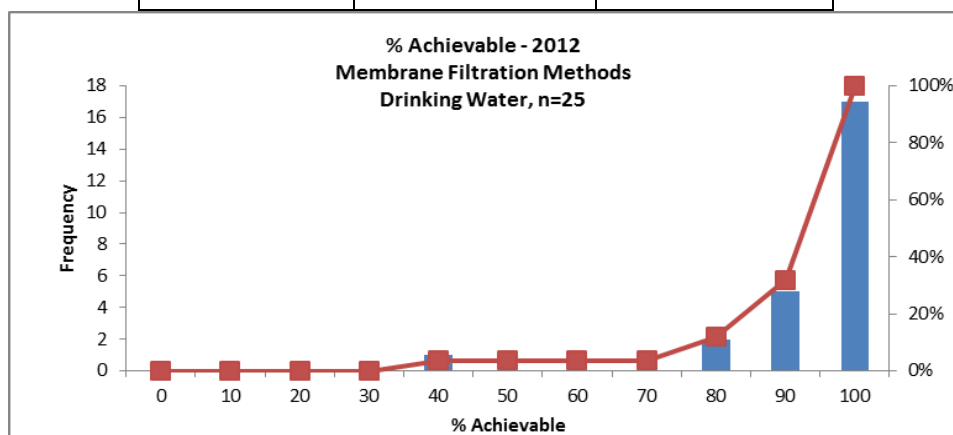
## Water Microbiology (Drinking and Environmental Water Sample) Score

The following Score Tables illustrate the % Achievable scores for each method during 2012.

### Water Microbiology - Membrane Filtration Method

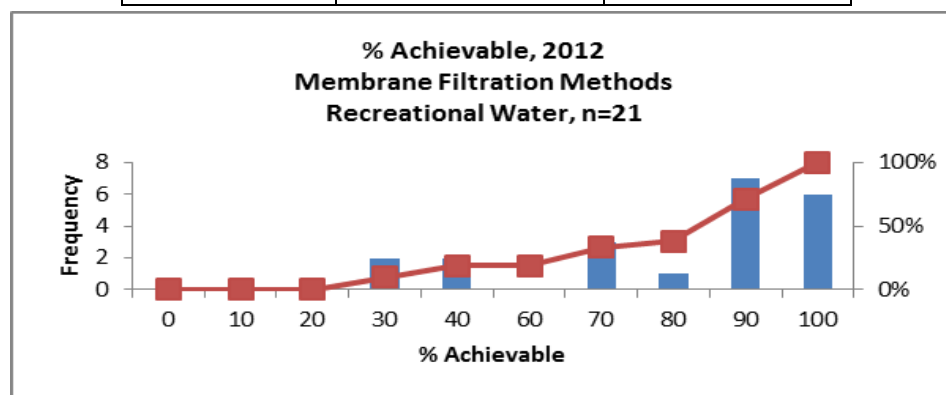
**Membrane Filtration Method Score Table. Drinking Water Testing Laboratories Performance for 2012**

% Achievable	Labs (n=25)	% Cumulative
40	1	4
80	2	12
90	5	32
100	17	100



**Membrane Filtration Method Score Table Recreational Water Testing Laboratories Performance for 2012**

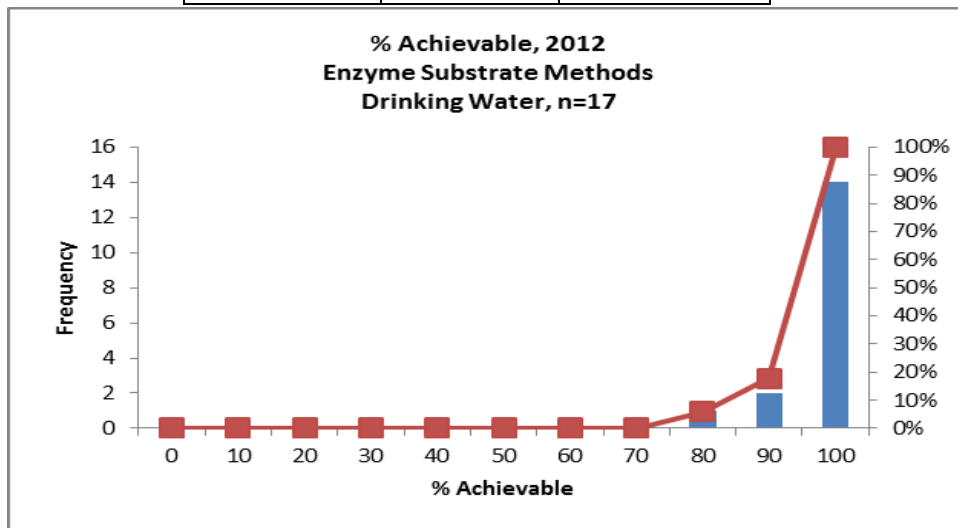
% Achievable	Labs (n=21)	% Cumulative
30	2	10
40	2	19
60	0	19
70	3	33
80	1	38
90	7	71
100	6	100



## Water Microbiology - Enzyme Substrate Method

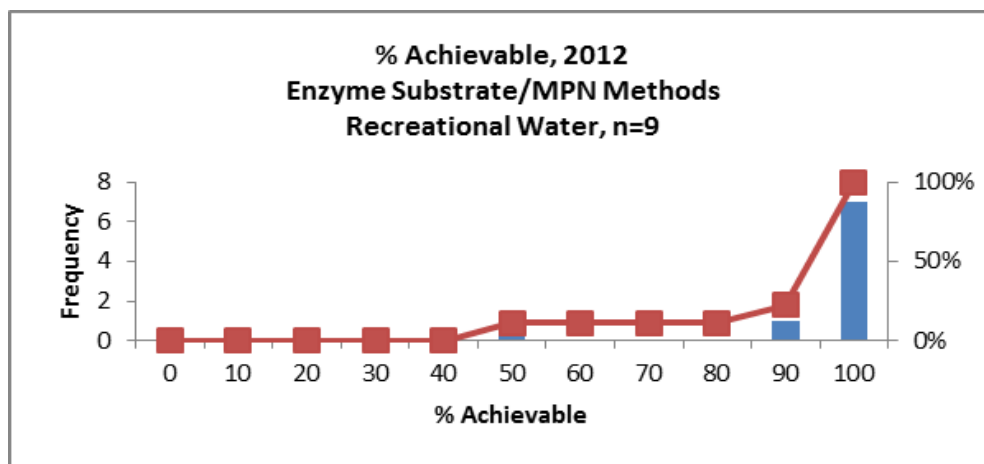
**Enzyme Substrate Method Score Table.  
Drinking Water Testing Laboratories Performance for 2012**

% Achievable	Labs (n=17)	% Cumulative
80	1	6
90	2	18
100	14	100



**Enzyme Substrate/Most Probable Number Method (MPN) Score Table.  
Recreational Water Testing Laboratories Performance for 2012**

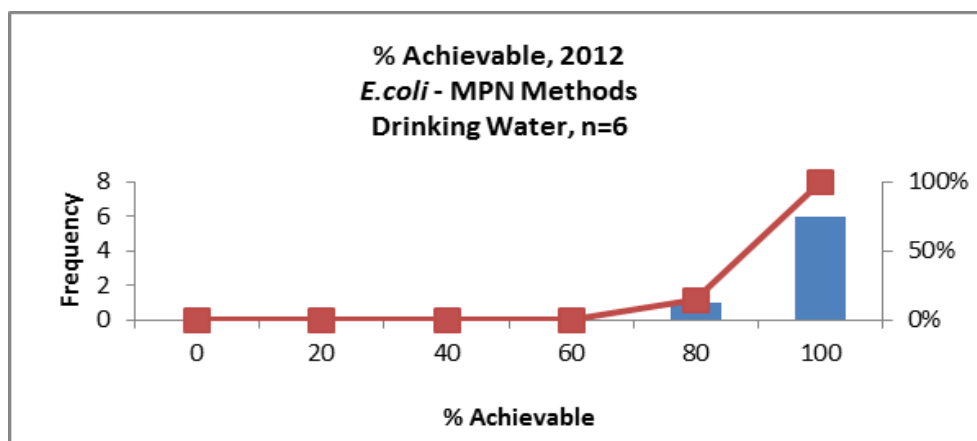
% Achievable	Labs (n=11)	% Cumulative
50	1	11
90	1	22
100	7	100



## Water Microbiology - Most Probable Number Method

**Most Probable Number (MPN) Method Score Table.  
Drinking Water Testing Laboratories Performance for 2012**

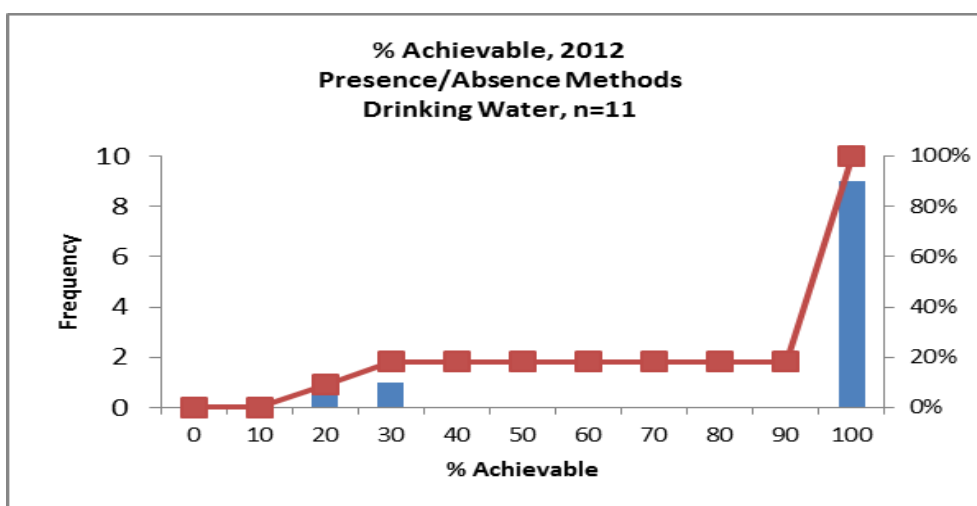
% Achievable	Labs (n=6)	% Cumulative
80	1	17
100	5	100



## Water Microbiology - Presence/Absence Method

**Presence/Absence Method Score Table.  
Water Testing Laboratories Performance for 2012**

% Achievable	Labs (n=11)	% Cumulative
20	1	9
30	1	18
100	9	100

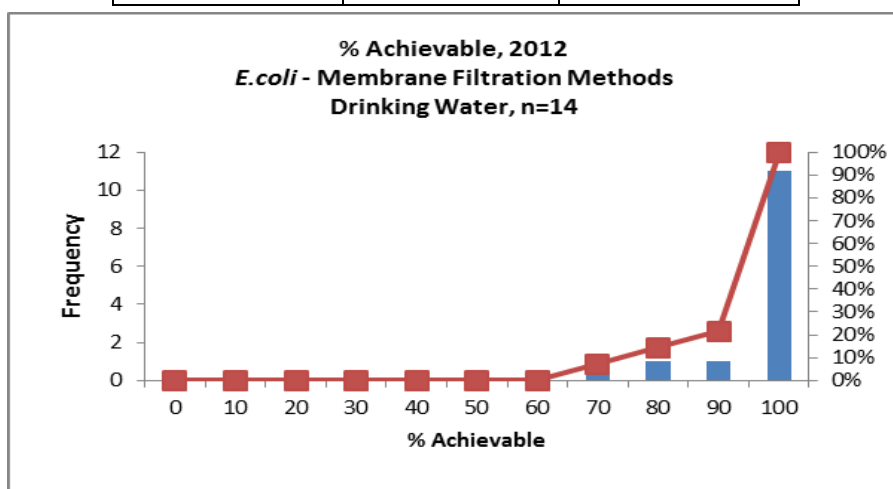


## Water Microbiology - *E. coli* Supplemental Testing

A total of 17 laboratories perform supplemental water bacteriology testing to discern *Escherichia coli* from other thermotolerant coliforms. These laboratories are assessed as a separate group and were assessed an additional 36 points maximum for the program year per method if they reported *Escherichia coli* and thermotolerant coliforms. The Membrane Filtration and the MPN methods were the methods used.

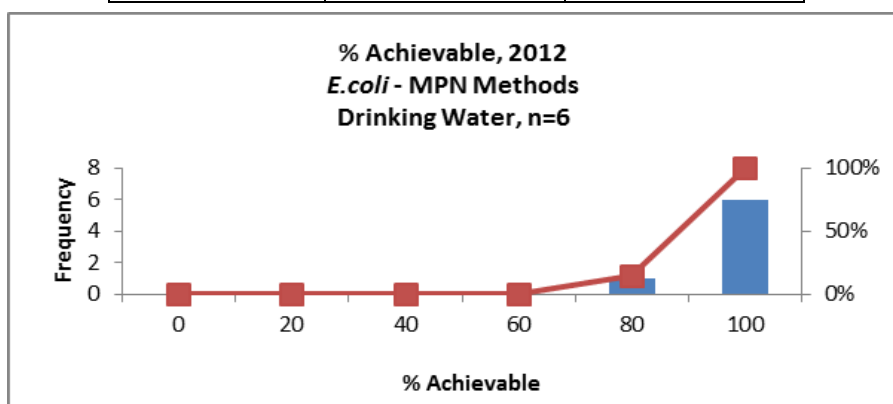
**Membrane Filtration Method Score Table: *E. coli* Testing, 2012**

% Achievable	Labs (n=14)	% Cumulative
70	1	7
80	1	14
90	1	21
100	11	100



**Most Probable Number Method Score Table: *E. coli* Testing, 2012**

% Achievable	Labs (n=6)	% Cumulative
80	1	17
100	5	100



## MYCOLOGY PROGRAM

CMPT acknowledges with appreciation the valuable and essential advisory and technical support of the Mycology Advisory Committee.

### Program Overview

The Mycology Program serves two constituent groups:

1. Basic Mycology: British Columbia clinical dermatologists who perform mycology cultures in office laboratories. This program includes challenges for skin samples (dermatophytes and yeasts) and KOH slides.

2. Mycology Plus Program includes 12 proficiency challenges for dermatophytes, common laboratory contaminants, yeast identification and KOH slides.

For a more comprehensive Program Overview please visit:

[http://www.cmpt.ca/programs\\_mycology/mycology\\_plus.htm](http://www.cmpt.ca/programs_mycology/mycology_plus.htm)

In 2012, two laboratories participated in the Basic Mycology program and 11 in the Mycology Plus program.

Tables 1 and 2 show the 2012 challenges for Basic Mycology and Mycology Plus programs respectively.

Table 1 Basic Mycology Program Challenges 2012 - 2013		
Date	Sample	KOH/Identification Challenge
September 2012	1209	KOH: negative
	1209-1	<i>Cryptococcus neoformans</i>
	1209-2	<i>Epidermophyton floccosum</i>
April 2013	1304	KOH: positive
	1304-1	<i>Saccharomyces cerevisiae</i>
	1304-2	<i>Microsporum canis</i>

Table 2 Mycology Plus Program Challenges 2012 - 2013				
Date	KOH	Yeast	Dermatophytes	Molds
September 2012 10 Participants	1209A: negative 1209B: negative	1209-1: <i>Cryptococcus neoformans</i> -CSF sample	1209-2: <i>Epidermophyton floccosum</i> - nail	1209-3: <i>Aspergillus niger</i> - joint fluid sample
January 2013 10 Participants	1301A: positive 1301B: negative	1301-1: <i>Candida parapsilosis</i> -central line sample	1301-2: <i>Trichophyton tonsurans</i> -skin scraping	1301-3: <i>Rhizopus</i> species contaminated with <i>Penicillium</i> species - forearm swab
April 2013 10 Participants	1304A: positive 1304B: negative	1304-1: <i>Saccharomyces cerevisiae</i> - liver abscess fluid sample	1304-2: <i>Microsporum canis</i> -skin scraping sample	1304-3: <i>Scediosporum</i> species -ankle ulcer swab

Results obtained by the participants are available at the program's results page:

[www.cmpt.ca/programs\\_results\\_page.html](http://www.cmpt.ca/programs_results_page.html)

## ENTERIC PARASITOLOGY PROGRAM

CMPT acknowledges, with appreciation, the essential advisory and technical support of the Enteric Parasitology Advisory Committee.

### Program Overview

The program consists of 3 surveys, each survey consisting of 3 SAF-preserved samples requiring a total of 9 challenge readings that include 3 concentrates and 3 stained smears.

For a more comprehensive Program Overview please visit:

[http://www.cmpt.ca/programs\\_parasitology/parasitology\\_program.htm](http://www.cmpt.ca/programs_parasitology/parasitology_program.htm)

In 2012, 24 laboratories participated in the Enteric Parasitology program.

Table 1 lists the samples and grades received for the 2012 challenges.

Table 1 Enteric Parasitology Challenges 2012					
Date	Sample	Parasite	Acceptable	Unacceptable	Ungraded
April 2012	1204-1	no ova and/or parasites seen	24	0	0
	1204-2	<b>Cyclospora cayetanensis</b> , <i>Chilomastix mesnili</i>	0	0	24
	1204-3	<i>Endolimax nana</i> , <i>Blastocystis hominis</i>	22	2	0
July 2012	1207-1	<b>Entamoeba histolytica/dispar</b>	24	0	0
	1207-2	<b>Giardia lamblia</b>	24	0	0
	1207-3	<b>Taenia species</b> , <i>Entamoeba coli</i> , <i>Blastocystis hominis</i>	22	2	0
October 2012	1210-1	<i>Entamoeba coli</i> , <i>Blastocystis hominis</i>	23	1	0
	1210-2	no ova and/or parasites seen	23	1	0
	1210-3	<b>Ascaris lumbricoides</b> , <i>Blastocystis hominis</i>	23	1	0
Total			185	7	24

Major pathogens in bold

## TRICHOMONAS VAGINALIS ANTIGEN PROGRAM

CMPT launched the *Trichomonas vaginalis* Antigen Program with the first shipment on August 8, 2011. The program consists of 3 surveys per year.

Each survey consists of 4 samples which are designed to be used with the Genzyme OSOM® *Trichomonas* Rapid Test Kit.

### *Trichomonas vaginalis* antigen - Grading Scheme

Grading is based on a 2 point scale (acceptable or unacceptable). Table 1 lists the samples and grades received for the 2012 challenges.

Table 1 <i>Trichomonas vaginalis</i> Antigen Challenges 2012				
Date	Sample	Results	Acceptable	Unacceptable
April 2012	1204-1	Negative	30	0
	1204-2	Positive	29	1
	1204-3	Negative	30	0
	1204-4	Negative	30	0
July 2012	1207-1	Negative	30	1
	1207-2	Positive	31	0
	1207-3	Positive	31	0
	1207-4	Negative	31	0
October 2012	1210-1	Positive	31	0
	1210-2	Positive	30	1
	1210-3	Negative	30	1
	1210-4	Positive	31	0

## SHIGA TOXIN PROGRAM

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

### Program Overview

CMPT launched the Shiga Toxin Program with the first shipment on May 7, 2012. Each survey consists of 3 simulated stool samples.

The stool samples provided can be analyzed by any regular method used by the participants. These methods can detect the toxin produced (cytotoxicity assays, immunoassays) or the presence of the toxin genes (nucleic acid amplification tests).

### Shiga Toxin - Grading Scheme

Grading is based on a 2 point scale (acceptable or unacceptable). Table 1 lists the samples and grades received for the 2012 challenges.

Table 1 Shiga Toxin Challenges 2012					
Date	Sample	Results	Acceptable	Unacceptable	Ungraded
May 7, 2012	1205-1	gene and toxin positive	7	0	0
	1205-2	gene positive, toxin negative	0	0	7
	1204-3	gene and toxin positive	7	0	0
November 5, 2012	1211-1	gene and toxin positive	7	0	0
	1211-2	gene and toxin positive	7	0	0
	1211-3	gene and toxin negative	7	0	0
Total			35	0	7



## 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). Laboratories can participate in some or all of the 3 sample types.

### Molecular Testing Grading Schemes

Grading is based on a 2 point scale (correct or incorrect). Table 1 lists the samples and grades received for the 2012 challenges.

Table 1 Molecular Challenges 2012						
Date	Sample		Results	Correct	Incorrect	Ungraded/DNP
April 17, 2012	MRSA	MR1204-1	positive	3	0	0
		MR1204-2	negative	3	0	0
		MR1204-3	positive	3	0	0
		MR1204-4	negative	3	0	0
	VRE	V1204-1	positive	1	0	2
		V1204-2	negative	1	0	2
		V1204-3	positive	1	0	2
		V1204-4	positive	1	0	2
	GBS	GB1204-1	negative	1	0	2
		GB1204-2	negative	1	0	2
		GB1204-3	positive	1	0	2
		GB1204-4	positive	1	0	2
August 14, 2012	MRSA	MR1204-1	negative	2	0	0
		MR1204-2	negative	2	0	0
		MR1204-3	positive	2	0	0
		MR1204-4	positive	2	0	0
	VRE	V1204-1	positive	1	0	1
		V1204-2	negative	1	0	1
		V1204-3	positive	1	0	1
		V1204-4	negative	1	0	1
	GBS	GB1204-1	negative	1	0	1
		GB1204-2	positive	1	0	1
		GB1204-3	positive	1	0	1
		GB1204-4	negative	1	0	1
Total				36	0	16

DNP: did not participate

CMPT Annual Report 2012-2013

## 2012 - 2013 CMPT PROGRAMS' PARTICIPANTS

### Clinical Bacteriology - Distribution of Participant Laboratories

Province / Territory	Joined in	A	B	C	C1	Total
Alberta	1992	15		2	1	18
British Columbia	1982	22	3	1	20	46
Manitoba	2001	13	2		1	16
New Brunswick	1993	4	1			5
Newfoundland and Labrador	1997	1				1
Nova Scotia	1993	9	1			10
Northwest Territories	1992	1				1
Ontario	2004	1	1			2
Prince Edward Island	1993	2				2
Saskatchewan	1996	12	3	5		20
Yukon	1992	1				1
<b>Total</b>		<b>81</b>	<b>11</b>	<b>8</b>	<b>22</b>	<b>122</b>