

**Vancouver Coastal Health Authority
Physicians'
Continuing Professional Development/
Continuing Medical Education
(CPD/CME)
Needs Assessment**

Final Report

2006

Submitted by:

Robert Bluman, Principal Investigator
Jim Thorsteinson, Principal Investigator
Sandra Jarvis-Selinger, Co-Investigator
Ryan Payne, Project Coordinator, Lead Researcher
Olatunde Olatunbosun, Researcher
Céline Cressman, Researcher
Riley Killam, Researcher

THE UNIVERSITY OF BRITISH COLUMBIA



The Division of
Continuing Professional Development and Knowledge Translation
Faculty of Medicine

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	i
ADVISORY COMMITTEE MEMBERSHIP	i
INVESTIGATORS.....	i
RESEARCHERS AND REPORT CONTRIBUTORS.....	i
FRAMING THE CONTEXT: WHY CPD, NOT CME?	ii
GLOSSARY OF ACRONYMS AND ABBREVIATIONS.....	iii
EXECUTIVE SUMMARY.....	iv
I. INTRODUCTION	1
II. PURPOSE OF THE NEEDS ASSESSMENT	1
III. METHODS	2
IV. FINDINGS.....	5
1. LEARNING TECHNOLOGIES – GPs/FPs vs. Specialists	5
2. CPD PARTICIPATION AND PREFERENCES.....	14
3. LEARNING NEEDS/PREFERENCES.....	16
4. LEARNING PREFERENCES AND KNOWLEDGE TRANSLATION.....	20
5. CHRONIC DISEASE MANAGEMENT.....	24
6. PRIMARY HEALTH CARE RENEWAL	26
7. INTERPROFESSIONAL EDUCATION – GPs/FPs vs. Specialists.....	28
8. READINESS FOR CHANGE – GPs/FPs vs. Specialists	31
9. INCENTIVES TO YOUR PARTICIPATION.....	33
10. BARRIERS TO PARTICIPATION	35
11. ORGANIZATIONAL ROLES IN CPD – GPs/FPs vs. Specialists	40
12. FINANCIAL AND OTHER RESOURCES FOR CPD FOR PHYSICIANS	44
V. RECOMMENDATIONS.....	47
VI. FUTURE RESEARCH DIRECTIONS & NEXT STEPS.....	53
APPENDIX 1 – Survey Protocol	- 1 -
APPENDIX 2 – Focus Group Protocol.....	- 21 -

ACKNOWLEDGEMENTS

We would like to acknowledge the major financial support provided by the Vancouver Coastal Health Authority. Distribution of the survey was kindly facilitated by the British Columbia Medical Association. This initiative has also benefited greatly from the expertise provided by the Advisory Committee members and their respective organizations. We would also like to thank the staff at the UBC Division of Continuing Professional Development and Knowledge Translation, without whom this project could not have been realized. Finally, we would like to extend a special thanks to the numerous physicians who gave their time to complete the survey and/or participate in a focus group.

ADVISORY COMMITTEE MEMBERSHIP

Presented in alphabetical order, representing all members, past and present:

Advisory Committee	Key Informants
Dr. Terry Chang	Dr. Dean Brown
Dr. Al Horii	Dr. Sue Harris
Dr. Kara Jansen	Dr. Kendall Ho
Dr. Joanne Larsen	Dr. Jocelyn Lockyer (PhD)
Dr. Sandra Lee	
Dr. Nirvair Levitt	
Dr. Rebecca Lindley	
Dr. Jan McCaffrey	
Dr. John McMoran	
Dr. Morgan Price	
Dr. Kam Shojania	
Dr. Eric Webber	

INVESTIGATORS

Robert Bluman, M.D	Principal Investigator
Jim Thorsteinson, M.D	Principal Investigator
Sandra Jarvis-Selinger, PhD	Co-Investigator

RESEARCHERS AND REPORT CONTRIBUTORS

Ryan Payne, B.A.	Lead Researcher
Olatunde Olatunbosun, B.Comm	Researcher
Céline Cressman, M.Sc	Researcher
Riley Killam, B.A.	Researcher

FRAMING THE CONTEXT: WHY CPD, NOT CME?

The term 'CME' has traditionally been used to describe on-going professional education in medicine. Many organizations, however, are moving toward the term 'continuing professional development' (CPD). CPD encompasses a broader range of relevant areas such as practice management, interprofessional patient-centered care and teaching, in addition to clinical skills and evidence-based care. The term CPD also supports a wider variety of learning formats, such as small group and self-directed learning.

While CPD is the primary term used in this report, the term CME appears when directly quoted by survey respondents and interview/focus group participants.

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

BCMA	British Columbia Medical Association
CDM	Chronic Disease Management
CFPC	College of Family Physicians of Canada
CPSBC	College of Physicians and Surgeons of British Columbia
CMA	Canadian Medical Association
CME	Continuing Medical Education
CPD	Continuing Professional Development
EMR	Electronic Medical Record
KT	Knowledge Translation
PDA	Personal Digital Assistant (i.e., hand-held computer)
RCPSC	Royal College of Physicians and Surgeons of Canada
UBC CPD-KT	University of British Columbia Division of Continuing Professional Development and Knowledge Translation

EXECUTIVE SUMMARY

Introduction

As modern medical practice is characterized by constant change, physicians (GPs/FPs & Specialists) must continually invest in updating their knowledge base in order to practice effectively. The goal of this initiative has been to assess the general continuing professional developmental (CPD) needs of Vancouver Coastal Health Authority (VCHA) physicians with a particular focus on their perceived CPD needs related to current and future initiatives in the context of systems change and primary care renewal. This report is directed toward those with an interest in the planning, development, organization and implementation of CPD initiatives. The results of this needs assessment provide insight into what types of educational activities, technologies and resources would be most beneficial to support the CPD needs of VCHA physicians.

Methods

This needs assessment employed a multi-method approach. Data collection methods included: (1) interviews with key informants, (2) a comprehensive survey for GPs/FPs and Specialists practicing in the VCHA, and (3) focus groups drawn from a sample of survey respondents. All data collection instruments were developed by the CPD-KT research team in conjunction with the project advisory committee. Topics such as barriers and incentives to participation in CPD, clinical and non-clinical learning needs and strategies to support knowledge translation were addressed. Quantitative data from the survey were analyzed using the computer program SPSS 13.0. Qualitative data from the survey were subjected to a thorough content analysis intended to identify salient thematic areas by grouping together similar responses. Interviews and focus groups were analyzed to validate the survey findings as well as reveal any additional themes which may exist.

Sample characteristics

A total response rate of 20% included 271 General Practitioners/Family Physicians (GPs/FPs) and 358 Specialists. This is a significant response rate, particularly for a survey which required over 30 minutes to complete. Slightly more than one-half (54%) of GP/FP participants were male and 46% were female. In comparison 65% of Specialists that completed the survey were male and 35% were female. Four focus groups and five interviews were conducted involving a total of 21 participants from a cross-section of medical practices.

Findings

Technology-Based Learning Needs

Survey data demonstrated a relatively high level of computer/internet and PDA use compared to lower use of EMR, chronic disease management toolkit and videoconferencing technologies. GP/FP participants typically expressed a greater need/desire for training across the continuum of technologies compared to Specialists, specifically in the use of the internet to access medical information and clinical update summaries as well as the use of PDAs to access clinical and pharmaceutical information at the point of care. Both groups expressed moderate to high levels of interest in receiving training in the implementation and advanced use of EMRs. When asked to share “*any additional thoughts*” they may have pertaining to the availability, use or integration of eHealth technologies into their practice, participants identified both financial and informational supports for implementation of eHealth technologies as essential.

CPD Participation and Preferences

Participants rated conferences as their preference of CPD formats, followed by consulting books or journals, UBC CME sponsored activities, small group learning and hospital rounds. Respondents did not express a strong time-based preference for CPD, though survey results suggest that a large proportion of physicians prefer local, half-day CPD events occurring on weekdays rather than full-day /weekend events at venues outside VCHA.

Strategies for Knowledge Translation

Most physicians cited small group workshops, conferences and the use of learning tools/strategies at CME/CPD events as helping implement learning and as effective aids in the promotion of knowledge translation (KT). Other KT interventions rated as effective included coaching from an outside consultant, opportunities to visit other clinics/practitioners and model their behaviours, increased time at events for reflection on implementation of new learning, in-office skills training, use of online modules and linkage to a community of practice.

Chronic Disease Management (CDM)

A relatively high proportion of GPs/FPs expressed interest in CPD related to the use of clinical practice guidelines, and the incorporation of CDM tools into their practice. A moderate proportion of GPs/FPs expressed interest in content related to dealing with patient non-adherence. Interest levels were lower with regards to using clinical practice audits and integrating group visits into practice. Specific CDM topics of GP/FP interest were Diabetes, Depression/Anxiety, Kidney Disease and Hypertension. Specialists were, by and large, less interested in CDM-focused CPD.

Interprofessional Education

At present, approximately half of physicians participate in interprofessional CPD; neither GPs/FPs nor Specialists have a strong desire to increase participation. Qualitative data analysis revealed increased financial support, as well as programs that further define the scopes and roles of health care professionals might increase participation. The major disincentive to participation in interprofessional CPD expressed was overly general or "fluffy" information as opposed to evidence based course information.

Incentives/Barriers to Participation

Survey results showed that the most powerful incentives for physician participation were CPD delivered close to home and approved for study credits. Qualitative data suggested the provision of "readily implementable" information as well as CPD occurring in small groups and "hands on" learning were also powerful incentives.

Participants indicated barriers to CPD participation included several competing issues, including the desire to protect personal time, the demands of a busy practice and the rising cost of CPD.

Organizational Roles in CPD

Both health authorities and the BCMA were seen as most responsible for *funding* CPD. GPs/FPs identified the College of Family Physicians as well as UBC academic departments (including UBC CPD-KT) as most responsible for *developing content*, while Specialists most frequently identified specialty departments and UBC academic departments. Hospitals, followed by UBC CPD-KT were seen as most responsible for *organizing and delivering* CPD. Participants identified their respective colleges (College of Family Physicians for GPs/FPs and Royal College of Physicians and Surgeons for Specialists) as being responsible for *setting standards* in CPD.

Financial and Other Resources for Physicians

Participants expressed the need for an up-to-date, centralized directory of CPD activities within BC as well as a CPD program that supports physicians returning to work after an extended leave of absence. Participants also stated that a major issue impeding their access to CPD was that the cost of CPD events (including the loss of practice income) which had risen over time without a commensurate increase in funding to support participation.

Recommendations:

The core concepts which emerged from this needs assessment have been distilled into a set of recommendations which the reader may practically apply towards the design of responsive CPD programming. Recommendations for change take into account all of the data and aim to offer concrete suggestions to improve CPD design and delivery.

Additionally, the data yielded several *key lessons* for stakeholders in CPD design and delivery. These key lessons pertain to a) providing sustained financial support to enable practice change, b) educating physicians about lesser known CPD interventions, c) ascertaining unperceived educational needs and d) assessing learner readiness for change and are visited more fully in the complete report.

1. CPD for the Integration of eHealth Technologies into Practice

- 1.1. Increase CPD course offerings for GPs/FPs in the following technology areas; 1) basic and advanced EMR usage 2) use of PDAs to access clinical and pharmaceutical information 3) use of internet to access clinical update summaries and 4) use of CDM toolkit. Technology-based CPD for Specialists should be focused on training in the use of the EMR.
- 1.2. Provide small group 'hands-on' learning opportunities that allow physicians to increase competency through direct use.
- 1.3. Support the entire medical office staff team through the technology adoption process. Change management must occur at the organizational (i.e. physician, nurse, MOA, etc) as opposed to the individual (i.e. physician) level.
- 1.4. Design CPD which assists physicians in selecting the technologies that will most dramatically improve clinical efficiency.
- 1.5. Identify technology champions across the province that can inform, facilitate and sustain the uptake of new technologies.

2. Designing CPD that is Responsive to Physician Preference

- 2.1. Increase the availability of local, half day courses that enable physicians to access "bite-sized" pieces of CPD without having to make major financial concessions due to time away from their practice.
- 2.2. Focus on CPD offerings which allow physicians to interact with new technologies and gain expertise in usage through direct experience.

3. Strategies for Knowledge Translation

- 3.1. Support alternative (alternative to didactic learning) models of CPD that assist the learner in incorporating newly acquired information into practice. Examples that may support the knowledge translation process include: participation in communities of practice, coaching from an outside consultant and opportunities to observe and model after other practices.
- 3.2. Re-engage learners with CPD content in the months following an educational event and support the ongoing integration of course content into practice.
- 3.3. Develop '*feedback mechanisms*' and learning tools which a) support the retention of knowledge following a CPD event (e.g. online tests and quizzes) b) measure the degree to which the learner is making changes in their practice patterns following the acquisition of new information and c) assess the positive or negative impact that the change is having on their practice (e.g. commitment to change exercises).
- 3.4. Provide '*clinical pearls*' or condensed information packages designed to summarize the core concepts of an educational event. This may serve to combat "information overload" by ensuring that the central message of the CPD event is emphasized for the learner.

4. CPD for Interprofessional Education

- 4.1. Focus on the '*how*' of working in clinical teams as opposed to the '*what*' of disease entities. However, when designing interprofessional CPD around a specific disease, determine which members of the health care team might be involved and develop CPD content which enriches team members understanding of the scopes and roles required.
- 4.2. Avoid designing overly simplified interprofessional course content which fails to address the learning needs of physician audiences.

5. Creating Incentives to Encourage Participation in CPD

- 5.1. Offer increased funding to compensate physicians for lost revenues, office overhead and travel costs associated with participating in CPD events. This is particularly important for specialists who are often required to travel internationally to access CPD relevant to their specific field.
- 5.2. Provide funding to subsidize the cost of CPD and thereby lower the cost of event registration.
- 5.3. Increase the availability of technology-enabled CPD activities (i.e. CPD via videoconference, PDA or internet) to mitigate some of the challenges associated with accessing traditional, non-local CPD.
- 5.4. Offer RCPSC or CFPC study credits for participation in any CPD activities

6. Strategies to Engage Physicians in CPD

- 6.1. Create a CPD program designed to support physicians returning to work after an extended leave of absence. This program could be created in cooperation with the College of Physicians and Surgeons of BC and in conjunction with appropriated educational bodies pertinent to the discipline concerned.
- 6.2. Establish a centralized website or directory which lists upcoming CPD event *topics, timing and location* and allows physicians to apply for funding on-line. Establishing all of these CPD resources in one place may reduce challenges associated with accessing CPD while simultaneously raising awareness. This resource could be further expanded to include physician referral resources.
- 6.3. Identify existing medical special interest or working groups (e.g. Physician User Groups, Communities of Practice, problem-based learning groups, group practices, physician-only or interprofessional teams) and design CPD which is responsive to their specific learning needs.
- 6.4. Fund the improvement of the technological infrastructure of primary care clinics so that GPs/FPs have adequate access to information technology tools (e.g. high-speed internet, internet protocol videoconferencing) that may be used in both educational and clinical contexts.
- 6.5. Provide funding to assist in the acquisition and use of new technologies (e.g. PDA programs, EMR software) and support training in the use of these tools to encourage long term adoption.

7. Organizational Roles in CPD

- 7.1. Funding to Support CPD should be sought from Health Authorities, BCMA and industry partners.
- 7.2. Preferred content developers would include CFPC, RCPSC, specialty organizations, UBC CPD-KT, other UBC academic departments, hospitals and local CME committees.

8. Designing CPD for Improved Chronic Disease Management

Note: the following recommendations relate to survey data that highlight the CPD needs specific to GPs/FPs in the VCHA and are not related to the Specialist group surveyed.

- 8.1. Expand on existing initiatives designed to help GPs/FPs streamline the management of CDM patients in their clinic.
- 8.2. Continue to support and develop CPD specifically targeted at assisting GPs/FPs with a) the use of clinical practice guidelines to enhance patient care, b) the incorporation of CDM tools into their practice and c) the management of non-compliant patients.
- 8.3. Focus on creating CPD for the following diseases: Diabetes, Depression/ Anxiety, Kidney Disease, Hypertension and Palliative Care.

Future Research Directions

This needs assessment examined physician CPD needs across a great *breadth* of topical areas; support is needed for the further examination of specific topics in order to gain a greater *depth* of understanding in the various domains. This may enable researchers, CPD providers and VCHA physicians to gain an enriched understanding of CPD needs within a specific area. Research topics addressed within this report suitable for future examination include (but are not limited to): *preferred formats for CPD participation, specific clinical learning need areas for VCHA physicians, strategies to promote knowledge translation, and strategies to integrate eHealth technologies into practice.*

Next Steps

Immediate next steps for this project include the dissemination of research findings to relevant audiences both within the VCHA and on a provincial level. In order to maximize the potential impact of findings, the results from this study should ideally be distributed to a broad audience including health authorities, CPD program planners and health care practitioners.

I. INTRODUCTION

Modern medical practice is characterized by constant evolution in terms of accepted norms of patient care, information management and even the structure of the teams which strive to provide medical care. For this reason, modern physicians must continually invest in updating their skills and knowledge base in order to practice effectively. The goal of this initiative has been to assess the general continuing professional developmental needs as perceived by Vancouver Coastal Health Authority (VCHA) physicians with a particular focus on their perceived CPD needs related to current and future initiatives in the context of systems change and primary care renewal.

This report is directed toward those with an interest in coordinating, organizing and developing content for CPD initiatives directed towards VCHA physicians. The results of this needs assessment provide insight into what types of educational activities, technologies and resources would be most beneficial to support VCHA physicians. It is hoped that the findings presented in this report will help CPD providers' direct future CPD investments in more effective ways through the development of responsive CPD strategies that meet the needs of VCHA physicians, clinical teachers and CPD providers.

Although this needs assessment is an appropriate tool for capturing physicians' perceptions of their learning needs and resulted in valuable data, it is less than ideal for identifying areas of unperceived needs that may exist. This represents a limitation for this research as well as an area for future investigation.

II. PURPOSE OF THE NEEDS ASSESSMENT

The purpose of this project is to determine the CPD needs of VCHA GPs/FPs and Specialists with a particular focus on the potential CPD needs related to systems change, as well as current and future primary care renewal initiatives.

It is our hope that the information provided in this needs assessment will:

- Provide a better understanding of the types of CPD activities, traineeships and resources that would be most beneficial to support VCHA physicians in adopting and adapting to evolving practice environments.
- Provide data to better direct future investment and development of CPD strategies which are responsive to the identified needs.
- Develop a focus around the most salient 'need areas'.

- Focus educational processes in support of improved health outcomes
- Engage VCHA leadership in support of these continuing professional development needs

III. METHODS

This needs assessment employed a multi-method approach. Data collection methods included: (1) a comprehensive survey for GPs/FPs and Specialists practicing in the VCHA, (2) interviews with key informants, and (3) focus groups drawn from a sample of survey respondents. This approach enabled validation of key findings that emerged from the different types of data. It also served a developmental purpose, in that the initial survey data was used to inform the interview and focus group processes. Thematic analysis within and across data sources was performed to inform the discussion and subsequent recommendations. The following sections provide an overview of the research methods used in this project.

Advisory Committee

An Advisory Committee comprised of various VCHA physicians (both GPs/FPs and Specialists) was formed to help guide the needs assessment. This group was assembled on two occasions to assist with the research process. In the first instance, the Advisory Committee was invited to contribute their expertise and insight to the survey design and the development of the focus group and interview protocols. In the second instance, the Advisory Committee played a vital role in validating and expanding upon the findings. This, in turn, informed the recommendations included in this report.

Needs Assessment Survey¹

A comprehensive needs assessment survey was designed in consultation with experts from the project working group and advisory committee. The survey addressed a wide range of relevant topics pertaining to VCHA physician learning needs, which included: barriers and incentives to participating in CPD, clinical and non-clinical learning needs, preferred learning formats, strategies for knowledge translation, financial resources, teaching and organizing CPD, chronic disease management and interprofessional education.

Distribution. In May 2006, with the assistance of the BCMA 3,132 surveys were distributed to physicians working within the VCHA. Invitations and surveys were distributed by email (which provided an online internet link to the survey) and then by post mail several days later.

¹ Please see Appendix 1 for the survey instrument.

Quantitative Analysis. The quantitative results of the survey were analyzed using the statistical software program SPSS (Statistical Packages for Social Sciences - version 10). Descriptive statistics such as variable frequencies and percentages were generated.

Qualitative Analysis. The survey contained many 'open ended questions' which allowed participants to share their thoughts in several of the survey's sections without constraint (i.e. as with Likert scale items). These items were subjected to a thorough content analysis intended to identify salient thematic areas by grouping together similar responses.

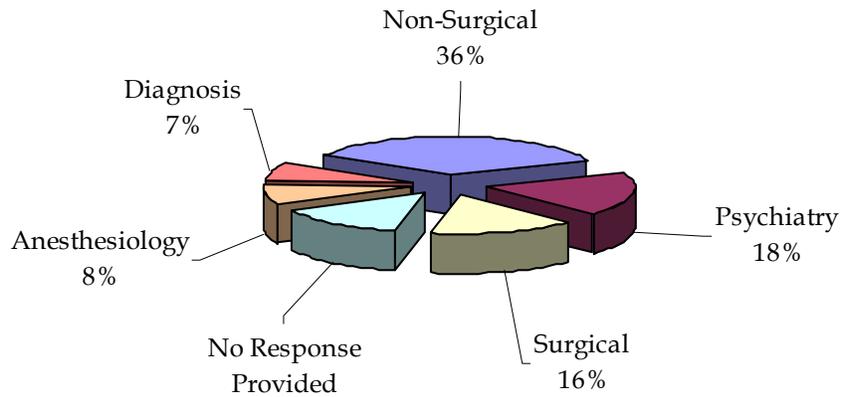
Characteristics of the Sample

Six hundred and thirty-four physicians responded to the survey, resulting in a 20% response rate. This is an excellent response rate, particularly for a 20 page survey that required over 30 minutes of physicians' time. The physician sample was composed of 271 General Practitioners / Family Physicians (GPs/FPs) and 358 Specialists. Five physicians who completed the survey did not indicate if they were a GP/FP or Specialist.

With a sample of 634 physicians, we can say with a 95% level of certainty, that the quantitative results provided in this report are within plus or minus 3.9% of what they would be if the entire population of physicians in the Vancouver Coastal Health Authority responded to the survey. Also at a 95% level of certainty, the sub-samples of 271 GPs/FPs yield a margin of error within plus or minus 6.0%, while results from the 358 Specialist are within a margin of error of plus or minus 5.2%.

Slightly more than one-half (54%) of GP/FP participants were male and 46% were female. In comparison 65% of Specialists that completed the survey were male and 35% were female. The results from the survey also indicated that more (74%) of the physicians who completed the survey are in full-time medical practice while 18% are in part-time medical practice and 9% are locums.

In terms of the breakdown of the Specialist participants, 36% of participants were non-surgical Specialists compared to 16% surgical. The most well represented groups in the survey were Psychiatry and Anesthesiology (18% and 8% respectively). A further breakdown of the Specialist sample can be found in the figure below.



IV. FINDINGS

1. LEARNING TECHNOLOGIES - GPs/FPs vs. SPECIALISTS

Introduction: The present survey assessed the technology based learning needs of GPs/FPs and Specialists in the VCHA, with a particular emphasis on understanding where educational support may be required to facilitate the use of technologies implicated in current systems change initiatives. The specific technologies included in this analysis were a) computer/internet as an information resource, b) Personal Digital Assistants (PDAs) as a point of care clinical information resource and c) technologies for eHealth; a category which included the electronic medical record (EMR), chronic disease management toolkit and videoconferencing among others. Survey data demonstrated a relatively high level of computer/internet and PDA usage amongst participants compared to a lower frequency of usage of eHealth technologies. With respect to self-perceived need/desire for training, GP/FP participants typically expressed a greater need/desire for training across the continuum of technologies listed compared to Specialist participants.

When asked to share “any additional thoughts” they may have pertaining to the availability, use or integration of eHealth technologies into their practice, participants identified both financial and informational supports for implementation of eHealth technologies as essential. Participants voiced concerns about the integration of eHealth technologies into their medical practices as well. These concerns included feelings that eHealth technologies may detract from the Dr/Patient encounter and concerns from more experienced physicians that introducing eHealth technologies into their practice may disrupt well established workflow patterns.

This section also includes two tables which display GPs/FPs and Specialists' respective technology based learning needs.

Survey Data

Type of Technology	Do You Use?		Would you like more TRAINING in...	
	Yes		Yes	
<u>Computer/Internet:</u>	GPs/FPs	SPECIALISTS	GPs/FPs	SPECIALISTS
A computer to look up information during or between visits	76%	85%	49%	32%
A computer within your exam room	37%	49%	40%	21%
High-speed internet in your office to access CME/CPD, clinical information, etc.	66%	83%	49%	33%
High-speed internet in your home to access CME/CPD, clinical information, etc.	90%	91%	47%	35%
A clinical resource program to access medical information (i.e. UpToDate or MD Consult)	67%	65%	53%	40%
<u>Internet to:</u>				
a) look up clinical practice guidelines	72%	67%	49%	33%
b) look up pharmaceutical information	70%	71%	48%	33%
c) read online journals	47%	76%	37%	31%
d) access clinical update summaries	52%	60%	56%	39%

Need for Training in use of Computer/Internet Resources: In terms of computer and internet usage, the majority of GPs/FPs and Specialists alike reported that they had access to and used a computer within their clinical setting to look up clinical information between visits, however Specialists more frequently reported having access to a computer (49% vs. 37%) and high-speed internet within their office (83% vs. 66%) than GPs/FPs.

Both groups reported that they access the internet to look up clinical practice guidelines and pharmaceutical information, however, Specialists were almost 30% more likely to use the internet to access on-line journals. Regarding self-perceived need for additional training/CPD in the use of computers and internet to support clinical encounters and enable access to information resources, GPs/FPs reported a greater need for additional training in all categories compared to their specialist counterparts. Typically GPs/FPs reported a need for more training with close to 50% frequency compared to Specialists who stated they desired more training approximately 33% of the time.

Type of Technology	Do You Use?		Would you like more TRAINING in...	
	Yes		Yes	
	GPs/FPs	SPECIALISTS	GPs/FPs	SPECIALISTS
<u>Hand Held Devices:</u>				
A PDA (Personal Digital Assistant) such as a Palm Pilot or similar Handheld or Blackberry	58%	53%	59%	41%
a) to look up clinical practice guidelines	27%	12%	57%	39%
b) to look up pharmaceutical information	54%	30%	51%	36%
c) to look up clinical information	48%	21%	56%	41%
d) to access CME/CPD	14%	8%	52%	40%

Need for Training in the use of Hand Held Devices: Despite the fact that more than 50% of survey participants stated that they use PDAs, reported usage of hand held technologies among GPs/FPs and Specialists for looking up clinical practice guidelines, pharmaceutical and/or clinical information, and in particular, for accessing CME/CPD is generally low (particularly amongst Specialist participants). In terms of desired training, close to 60% of GPs/FPs stated that they would like more training in the usage of hand held technologies for the above purposes, compared to approximately 40% of Specialists.

Type of Technology	Readily Available?		Do You Use?		Would you like more TRAINING in...	
	Yes		Yes		Yes	
	GPs/FPs	SPECIALISTS	GPs/FPs	SPECIALISTS	GPs/FPs	SPECIALISTS
Technologies for eHealth/ e-Learning:						
Electronic medical record (EMR) - implementation	29%	36%	31%	38%	58%	64%
EMR (advanced use) - achieving efficiencies or audits to improve outcomes	15%	13%	9%	13%	57%	50%
Patient Chronic disease management (CDM) data (i.e. CDM flow sheets, the "Toolkit")	52%	8%	48%	5%	47%	35%
Videoconferencing - (using Health Authority or University-based facilities)	22%	39%	12%	32%	30%	35%
Videoconferencing - (using computer-based facilities)	21%	34%	9%	25%	32%	35%
Provincial resources (e.g. BC Nurse Line, BC Health Guide Online, etc.)	62%	48%	20%	12%	25%	25%
Office website (e.g. with recommended links for your patients)	23%	22%	14%	14%	40%	36%
Interactive online CPD sessions	28%	34%	12%	15%	44%	35%

Need for Training in the Use Of eHealth Technologies: With the exception of the CDM toolkit (in the case of GPs/FPs only) and provincial resources such as the BC Nurse Line, etc., the survey results indicated that technologies for eHealth/eLearning are neither readily available nor frequently used by survey participants. Regarding future training in the use of eHealth technologies a moderate to high proportion of both GPs/FPs and Specialists voiced a need for more training in both the implementation (58% and 64% respectively) and advanced use (57% and 50% respectively) of electronic medical records. GPs/FPs voiced a moderate level of perceived need for training in the use of the CDM toolkit (47%), participation in interactive, on line CPD sessions (44%) and the development of an office website (40%).

Content Analysis of Qualitative Data

Financial Support for Implementation: Both GPs/FPs and Specialists stated that they would like to see more financial support from the BCMA to facilitate the implementation of new technologies into their clinic and hospital settings respectively. Participants often declared that incorporating new technologies designed to improve practice efficiency into a clinical setting with an established workflow pattern may result in decreased productivity both economically and clinically. Physicians asserted that funding for both staff training and overhead while the users are adapting to the 'learning curve' would likely increase the feasibility of incorporating eHealth technologies into physician workflow. Further, participants often stated that the introduction of new technologies represents an exercise in change management for the entire 'team' as opposed to the physician alone and that the CPD provided must reflect this reality.

"[EMR] Training and maintenance is costly. Training needs are dynamic and decrease over years of EMR use but are persistent and use up resources (both time and money)."

"The cost of many eHealth technologies is quite high. For hospital based MD's it's not something the health authorities pay for...It takes time to use these resources-time that we are not paid to spend."

"It's actually the staff who have to use it because you've got not just physicians, but you've got MOAs and all these other people who have really a rudimentary knowledge of computers. They cannot troubleshoot themselves. You have to tell them exactly what to do and what key to press in order to get the information they need. So you've got a huge change management problem there and it won't be just the physicians alone, it's got to be the entire office to get everyone sort of working at the same pace. I think you have to have the entire office sort of understand what you're doing and where you're going."

Informational Support for Implementation: Both GP/FP and Specialist participants stated a need for more informational support with regards to implementing technologies into their clinical settings. A portion of these statements centered around the challenges in selecting which technologies to use when faced with an overwhelming array of different types of technologies (EMRs, PDAs) and different vendors. Furthermore, a subset of participants expressed concern that that these technologies may be transient or "not around for the long haul" which would serve to negate their efforts in learning to use them. These physicians indicated that the system that they select may not be interoperable with the systems selected by other health care providers, hospitals or health authorities, which would undermine the technologies effectiveness as

information communication aids. Generally speaking, physicians called for more support in identifying the technologies that would be most suitable for their specific needs.

"There are so many programs and options! Some guidance regarding good resources would be helpful."

"Will likely implement EMR in the office but unsure which, and how to select."

"Part of the problem is the lack of training in how to access these types of services."

"[We need to] make sure to get software that allows us all to communicate with one another."

"My office is poised with a computer network for booking and billing, but I am uncomfortable to proceed with a time consuming, poorly financially compensated project of converting my practice to EMR without knowing that we are using a system that we will stick with...We need much better guidance with this step than we are currently receiving."

Specific Learning Needs for Each Group: Survey data yielded some similar themes pertaining to GPs/FPs and Specialists' perceived technology based learning needs and also some themes which were unique to each group. GP/FP and Specialist participants both reported the need for an improved technological infrastructure in both hospital and office based practice settings. Physicians stated the need to both increase the availability of modern technologies such as high-speed internet and EMR in such settings and to standardize the tools available across clinical settings to ensure that everyone "is on the same" system.

Specialist participants more frequently commented on the need for more online, accredited CPD courses and increased access to online journal information in specialized medical fields. Specific learning needs for GP/FP participants included creating and using linkages between the office/clinic computer system and the laboratory to expedite lab result reporting. Several GP/FP participants in both interviews and focus groups described the utility of PDA devices as 'just in time' learning aids and voiced their desire for more training in their advanced use as point of care decision support tools. The following quotes illustrate this sentiment.

"If you go to a conference and then have the relevant stuff put on your PDA that would be kind of nice. I went to one where they were talking about the side effects of all the psychiatric medications... there were a few key points for each drug that you really wanted to have down and I thought if that could have been put onto PDA for instance, which I did in fact, I wrote it out on my own. But if that could have been put on a program that we already had so you could just say, 'I heard about that drug, what was the thing that we're supposed to check, what was the level or what was the, um, main side effects of that one, was it weight gain or weight loss', you

know? It would have been beautiful actually. Is there some way to do that because it's very hard to get it at your fingertips when you just need it?"

"Yeah, so I guess the decision support stuff, I mean I guess if you don't have to go to another room and look something up or whatever and you've got something quickly, I think the PDA thing is probably one of the biggest improvements that medicine's had."

Technology Based Medicine and the Erosion of the Patient Encounter: Antithetic to the theme of technology as an aid in the clinical context, a small subset of participants characterized eHealth technologies as being potentially detrimental. Some physicians argued that many eHealth tools increase workload and subsequently decrease clinical efficiency compared with paper based resources and that too much emphasis is being put on technology related CPD. Other physicians asserted that the use of electronic decision support tools, notably PDAs, have the potential to negatively impact the physician patient encounter by putting the technology, as opposed to the patient, at the center of the clinical encounter. The following quotes illustrate these concerns.

"I believe that too much technology has eroded the human contact with the patients. We neglect to listen to our patients, look and examine, do more clinical contact with our patient, rather than transfer the human patient onto the screen of a computer. I see too many NEW generation doctors who interact with the computer instead of the person in front of them."

"Useful tools in some ways, but often more awkward than paper information. Patients do not like their MD using a computer when taking a history or examining them."

The Years in Practice Effect on Technology Adoption: Several participants stated that although they believe that eHealth technologies have tremendous potential to positively impact their practice, they remained unenthusiastic about making changes in their workflow patterns at a late stage in their medical careers. The following quotes illustrate the challenges that some physicians face in introducing technologies into already established practice patterns:

"A lot of us are 50+ and we don't have any prior knowledge with technology and to find time out of practice to learn this technology is challenging."

"There's probably no limit to the amount of things that we should or could be trained in. I'm involved right now in a palm pilot study so I'm trying to, I actually bought a very good palm pilot and I'm think, I was trying to think of ways of integrating it into my practice cause it sounded really good. The problem with guys like me that have been doing this for 30 years is that we have habits already."

Within the survey, physicians were asked to identify their principal learning need areas pertaining to learning technologies. For each learning need area, physicians were instructed to identify at least one topic they would like to learn about. These topics could include knowledge, skills or procedures. GPs/FPs and Specialists technology learning need areas are presented on the following pages.

GPs/FPs- Technology Learning Need Areas

Learning Need Area	Number of responses (out of 430)	Specific Topics Mentioned (Number of responses)
EMR (Electronic Medical Records)	97	<ul style="list-style-type: none"> ▪ Learning to use (e.g., in exam room with patients) (29) ▪ Choosing a system (28) ▪ Implementing a system (6) ▪ Converting paper files (3) ▪ Privacy issues (3) ▪ CDM (3)
PDA (Palm Pilot, Blackberry, Handheld)	65	<ul style="list-style-type: none"> ▪ Choosing one (16) ▪ Accessing medical information (13) ▪ Learning to use (9) ▪ Setting up guidelines (4) ▪ Integrating into practice (3)
Electronic Resources for Patients (Websites, Educational Materials)	12	<ul style="list-style-type: none"> ▪ Accessibility (4) ▪ Where to find (3)
Online Journals	10	<ul style="list-style-type: none"> ▪ Searching (4) ▪ Using systems (3)
Web Search Strategies	10	
Internet in Office Practice	9	
Computer / Laptop / Tablet	8	<ul style="list-style-type: none"> ▪ Accessing medical information (3) ▪ Software choices (3)
Videoconferencing / Teleconferencing / Interactive Online Sessions	8	<ul style="list-style-type: none"> ▪ How to use (3)
Clinical Practice Guidelines	8	<ul style="list-style-type: none"> ▪ Easy access (3)
Online Medical Resources	7	
CDM (Chronic Disease Management)	7	
Interactive Online CME / CPD	5	
Video Lessons / Interactive Teaching Materials	3	
PowerPoint	3	

Specialists-Technology Learning Need Areas

Learning Need Area	Number of responses (out of 304)	Specific Topics Mentioned (Number of responses)
EMR (Electronic Medical Records)	49	<ul style="list-style-type: none"> ▪ Optimizing use (e.g., in exam room with patients) (15) ▪ Choosing a system (13) ▪ Audits (3)
PDA (Blackberry, Handheld)	48	<ul style="list-style-type: none"> ▪ Selection (12) ▪ Learning how to use (5) ▪ Looking up information on various medical topics (5)
Online Journals	15	<ul style="list-style-type: none"> ▪ Accessing (3)
Videoconferencing/ Internet-Based Teleconferencing	14	<ul style="list-style-type: none"> ▪ Learning how to use (3)
Internet	13	<ul style="list-style-type: none"> ▪ Searching (3) ▪ Accessing medical information (3)
Web Searches	12	
Clinical Practice Guidelines	8	<ul style="list-style-type: none"> ▪ Accessibility (4)
Online CME/CPD	6	
Resources for Patients	5	
Surgical Techniques	4	<ul style="list-style-type: none"> ▪ Procedures (3)
Voice Recognition/Dictation	4	
PowerPoint	3	
CDM (Chronic Disease Management)	3	

2. CPD PARTICIPATION AND PREFERENCES

Introduction: CPD can be delivered in many different ways. We asked physicians their opinions regarding a variety of CPD formats. Specifically, we wanted to know: whether they **currently participate** in each of the following CPD formats and what **level of preference** they attach toward each format. A four point Likert scale was used to measure level of preference and the categories of “moderate” and “high” preference were aggregated to calculate the overall level of preference towards a given format.

CPD Formats	Within the past 2 years, did you PARTICIPATE in		What is your LEVEL OF PREFERENCE toward this format?					High Level of Preference (Aggregate) ²
	Yes	No	Not Preferred 1	Slightly Preferred 2	Moderately Preferred 3	Highly Preferred 4		
Conferences (local or elsewhere)	97%	3%	3%	7%	36%	55%	91%	
Consulting books and/or journals	94%	6%	4%	16%	44%	37%	80%	
UBC-CME sponsored activities	81%	19%	9%	18%	44%	28%	73%	
Other small group learning (as opposed to lecture)	66%	34%	13%	23%	36%	27%	64%	
Hospital rounds	76%	24%	15%	23%	40%	23%	62%	
Journal clubs	48%	52%	25%	25%	30%	21%	50%	
Self-assessment activities (e.g. audit, personal learning project)	55%	45%	27%	28%	33%	12%	45%	
Clinical traineeships (e.g. funded training in specific areas over a week or longer)	13%	87%	38%	21%	22%	19%	41%	
Community hospital programs	44%	56%	35%	26%	28%	11%	39%	
Non-accredited pharmaceutical or industry sponsored promotional activities	68%	32%	36%	32%	25%	6%	31%	
Foundation for Medical Practice Education's Practice Based Learning Programs (GPs/FPs Results)	GPs/FPs 33%	GPs/FPs 67%	GPs/FPs 30%	GPs/FPs 25%	GPs/FPs 28%	GPs/FPs 17%	GPs/FPs 45%	

Participation and Preference: Over 75% of physicians indicated that they had participated in CPD through: conferences (97%), consulting books and/or journals (94%), UBC-CME sponsored activities (81%), as well as hospital rounds (76%). These four CPD formats as well as small group learning are the most preferred, as rated by physicians.

² For the purpose of this analysis, High Level of Preference refers to the aggregate of physicians who indicated that the above CPD formats were moderately or highly preferred.

Differences between GPs/FPs and Specialists: The data on CPD participation and preferences was further analyzed, and the largest difference between GPs/FPs and Specialists participation levels in CPD within the past two years are for the following CPD formats: journal clubs (24% vs. 66% respectively) self-assessment activities (37% vs. 69%), Foundation for Medical Practice Education's Practice Based Learning Programs (33% vs. 9%), as well as hospital rounds (64% vs. 85%).

3. LEARNING NEEDS/PREFERENCES

Introduction: The survey assessed VCHA physicians learning preferences/learning needs. The following section describes first, the specific times and locations for CPD that appeal to VCHA physicians and second, the topics that participants expressed the need to learn more about. A description of core clinical learning needs is comprised of two tables, one for GPs/FPs and another for Specialists and describes in detail physician learning needs by learning need area (e.g. emergency medicine) and associated subtopic(s) (e.g. trauma). Although this section primarily addresses participants perceived learning needs, participants in focus groups highlighted the importance of utilizing population health statistics as a means to capture areas of unperceived need when designing CPD programming. This sentiment is reflected in the analysis below as well.

	Not Preferred	Slightly Preferred	Moderately Preferred	Highly Preferred	Moderate and High Preference Combined
Local	4%	17%	39%	40%	79%
Half-day	13%	22%	45%	19%	64%
Weekday	21%	18%	34%	27%	61%
Full-day	16%	26%	33%	24%	58%
Weekday - Evening	22%	25%	35%	19%	54%
Out of town	26%	23%	32%	20%	52%
Multiple days	26%	28%	31%	15%	46%
Weekend	34%	20%	25%	21%	46%
Weekday - Breakfast time	49%	19%	22%	10%	31%
Weekday - Lunch time	54%	19%	20%	8%	28%
March/Spring Break	56%	21%	18%	6%	24%
Summer	65%	16%	15%	4%	19%

Learning Preferences- Time and Location: Physicians in the Vancouver Coastal Health Authority did not express a strong time based preference for CPD. However, a generalization that can be extrapolated based on survey results is that more physicians prefer to attend half-day CPD events (64%) and CPD activities occurring on weekdays (61%) rather than full-day or weekend events. In terms of a location based preference, the data suggested that participants prefer local events (79%) to events occurring out of town (52%). The data failed to demonstrate any major differences between GPs/FPs and Specialists in terms of time or location based learning preferences.

In an open ended question, physicians were asked to identify their principal clinical learning need areas. For each learning need area, physicians were instructed to identify at least one topic they would like to learn about. These topics could include knowledge, skills or procedures. GPs/FPs and Specialists learning need areas are presented on the following pages:

GPs/FPs- Table of Core Learning Needs (by learning Need Area and Specific Topic)

Learning Need Area	Number of responses (out of 463)	Specific Topic Mentioned (Number of responses)
Psychiatry	55	<ul style="list-style-type: none"> ▪ Depression (10) ▪ Dementia / Delirium (8) ▪ Cognitive behavioural therapy (7) ▪ ADD (4) ▪ Mood disorders (3) ▪ Paediatrics (3) ▪ Pharmacology (3) ▪ Psychotherapy (3)
Emergency medicine	48	<ul style="list-style-type: none"> ▪ Cardiology (4), Toxicology (4) ▪ Trauma (4), Airway management / intubations (3) ▪ Wound care / suturing (3)
Family medicine updates and/or general medical review	46	<ul style="list-style-type: none"> ▪ Chronic disease management (9) ▪ Pharmacology (9), Pain Management (8) ▪ Cross-cultural care (3) ▪ Laboratory and investigative procedures (3)
Orthopaedics and sports medicine	37	<ul style="list-style-type: none"> ▪ Physical examination (7), Sports medicine (6) ▪ Fracture (4), Joint injections (4)
Obstetrics and Gynaecology	32	<ul style="list-style-type: none"> ▪ IUD insertion / Gynaecological procedures (14) ▪ Contraceptive and menstrual problems (3)
Cardiology	28	<ul style="list-style-type: none"> ▪ CHF (5), ECG (4), Hypertension (3)
Medical microbiology	24	<ul style="list-style-type: none"> ▪ Infectious diseases (6), HIV / AIDS (4) ▪ STIs (3), Travel medicine (3)
Geriatrics	21	<ul style="list-style-type: none"> ▪ Alzheimer's disease (3)
Endocrinology	19	<ul style="list-style-type: none"> ▪ Diabetes (14)
Paediatrics	18	<ul style="list-style-type: none"> ▪ Behavioural problems (3)
Dermatology	16	<ul style="list-style-type: none"> ▪ Rashes (3)
Preventative medicine	13	<ul style="list-style-type: none"> ▪ Nutrition (4), Obesity (3)
Internal Medicine	11	
Palliative	11	
Nephrology	8	<ul style="list-style-type: none"> ▪ CKD (3)
Addictive Medicine	7	
Business Management	7	
Neurology	7	
Rheumatology	7	<ul style="list-style-type: none"> ▪ Joint injections (3)
Surgery	7	
Oncology	5	
Plastic Surgery	5	
Radiology	5	<ul style="list-style-type: none"> ▪ Ultrasound (3)
Anaesthesiology	4	
Gastroenterology	4	
Ophthalmology	3	
Sex medicine	3	
Urology	3	

Specialists- Table of Core Learning Needs (by learning Need Area and Specific Topic)

Learning Need Area	Number of responses (out of 495)	Specific Topic Mentioned (Number of responses)
Psychiatry	112	<ul style="list-style-type: none"> ▪ Pharmacology (16) ▪ Addictive medicine (15) ▪ Mood disorders (6) ▪ Cognitive behavioural therapy (5) ▪ Dementia / Delirium (4) ▪ Paediatric pharmacology (4) ▪ Anxiety disorders (3) ▪ Depression (3) ▪ Personality disorders (3) ▪ PTSD (3)
Emergency medicine	44	<ul style="list-style-type: none"> ▪ Toxicology (6) ▪ ACLS / ATLS (5) ▪ Ultrasound (4) ▪ Airway management / intubations (3) ▪ Paediatrics (3)
Personal development	25	<ul style="list-style-type: none"> ▪ Teaching (15)
Surgery	25	
Anaesthesiology	24	<ul style="list-style-type: none"> ▪ Regional anaesthesia (6) ▪ Ultrasound guided procedures (4) ▪ Airway management / intubations (3)
Radiology	22	<ul style="list-style-type: none"> ▪ MRI (5) ▪ Ultrasound (4) ▪ CT (3)
Cardiology	18	
Internal medicine	18	
Neurology	16	<ul style="list-style-type: none"> ▪ Physiology (3)
Orthopaedics and sports medicine	16	
Paediatrics	16	<ul style="list-style-type: none"> ▪ Child abuse (3)
Obstetrics and Gynaecology	15	
Medical microbiology	12	<ul style="list-style-type: none"> ▪ HIV/AIDS (3)
Pharmacology	12	<ul style="list-style-type: none"> ▪ Drug interactions (3)
Oncology	11	
Research	10	
Critical care medicine	9	
Dermatology	9	<ul style="list-style-type: none"> ▪ Rashes (4)
General updates	9	
Geriatrics	9	<ul style="list-style-type: none"> ▪ Dementia / Delirium (4)
Ophthalmology	9	
Practice management	9	
Chronic disease management	8	<ul style="list-style-type: none"> ▪ Pain management (5)
Nephrology	5	
Endocrinology	4	
Rehabilitation medicine	4	

Content Analysis of Qualitative Data

The Use Population Health Statistics in the Design of CPD: A small subset of participants expressed the need to incorporate reliable epidemiological data into the design of CPD programming. These respondents noted that CPD course design is often centered around physicians' perceived needs, and while this may provide physicians with information in areas in which they would like to learn it often occurs at the cost of providing CPD in the areas that most dramatically impact their patient populations. The following illustrate the need to consider population health statistics when designing CPD.

"If I was going to go back and actually study anything I would study epidemiology because I find that there are so many people, so many conferences and so many ideas coming across at the same time and most focused on just one small area at a time... some of those ideas are just dead wrong or exactly the opposite of what's really true from a population health perspective."

"I hope that it [CPD] is linked with statistics concerning the burden of disease and that we make sure that we train physicians to take care of those diseases. As a health authority I think they [the VCHA] are responsible for the health of the population."

4. LEARNING PREFERENCES AND KNOWLEDGE TRANSLATION

Introduction: One of the primary aims of CPD programs is to encourage the process of *knowledge translation*, which in the context of the clinical learner means to advance the flow of 'academic' knowledge into beneficial health applications, or in essence 'translate' newly acquired knowledge into practice (Davis et al., 2003). The present survey developed from a review of contemporary literature on the subject, a comprehensive list of interventions designed to assist the learning in incorporating the newly acquired information into their workflow pattern either during or after a CPD intervention.

Participants were asked to rate the options provided on a Likert scale continuum as either "not effective", "moderately effective" or "very effective" to which the vast majority of interventions were rated favourably. When asked to suggest any other supports (beyond the list provided) which may facilitate knowledge translation, participants often identified *small group interaction, feedback mechanisms and condensed information packages* as potentially powerful aids. The need for financial support to compensate for temporary practice inefficiencies while translating knowledge into practice was also frequently cited.

Survey Data

Interventions for Knowledge Translation	Not Effective 1	Moderately Effective 2	Very Effective 3	Combined Effectiveness	Mean Scores
Small group workshops	4%	39%	57%	96%	2.52
Conferences	5%	51%	44%	95%	2.39
Coaching/facilitation from an outside consultant	29%	47%	24%	71%	2.20
Learning tools/strategies at CME/CPD events to help implement learning	19%	60%	22%	82%	2.03
In-office skills training (e.g. a teacher/mentor/consultant visiting your office)	34%	35%	31%	66%	1.97
Modeling (opportunities to observe practices which possess the desired skill set)	31%	45%	25%	69%	1.94
Increased time at events for reflection on implementation plans after new learning	33%	50%	18%	67%	1.85
Online Modules	35%	55%	11%	65%	1.76
Linkage to a community of practice (i.e. working with those who are engaged such as PUGs or PBSGL, etc.)	44%	45%	11%	56%	1.67
Role Play	67%	27%	6%	33%	1.40

Perceived Effectiveness of Interventions for Knowledge Translation: When asked what types of interventions they felt would have greatest impact in helping to translate knowledge into sustained changes in clinical practice, the majority of physicians cited small group workshops (96%), conferences (95%), and learning tools/strategies at CME/CPD events to help implement learning (82%) as effective. Other knowledge translation oriented interventions mentioned in the survey were also rated as effective in more than 50% of cases (typically between 60-70% of the time). These interventions included coaching from an outside consultant (71%), modeling opportunities (69%), increased time at events for reflection on implementation plans after new learning (67%), in-office skills training (66%), online modules (65%) and linkage of a community of practice (56%). The sole intervention physicians consistently rated as an ineffective intervention for assisting in knowledge translation was role play (33%).

Content Analysis of Qualitative Data

Opportunities for Interactive Learning: A large volume of responses centered on physicians' desires to learn in interactive settings with other practitioners as a means to ensure that their learning experiences effectively translated into changes in clinical practice. Physicians often indicated that this learning format would allow them to have 'hands-on' learning experiences when necessary, engage in case-based learning that might overlap with their specific clinical learning needs, and otherwise engage in a "focused discussion with colleagues facing similar challenges." Several different types of small group formats were cited by participants as leading to encouraging and meaningful practice change. These formats included small group workshops featuring case based learning, communities of practice and practice shadowing opportunities, which enable the learner to observe the desired skill set being modeled in a clinical setting or work one on one with a specialist mentor.

"In my opinion, small group courses focusing on one area would be the most useful way to learn and facilitate long term change."

"Community of practice models have been shown to be highly effective."

"[Regarding] tagging along and watching somebody else who may have a little bit more experience in a particular area. I've done that a couple of times doing, spending a week or two with a person who's maybe an expert in a particular area just watching over the shoulder and I found that very helpful. If there was some way of facilitating that process I think that would appeal to a certain number of doctors."

"Access to Specialists offices to mentor in specific areas would be the most helpful."

The element shared by the entire small group interventions cited was the departure from the traditional conference model of didactic learning which offers less opportunity for repetitive practice of procedural skills, hands on learning and engagement of colleagues/instructors.

"Yeah, the small group always works the best for me. You know, 6 to 8 docs and somebody having people actually do practical things. Not a didactic. It would be actual hands-on experience. It's like the old story of doing things two or three times and then it's easy for you to do."

Feedback Mechanisms: An area that wasn't assessed in the survey but highlighted by several survey participants in an open ended response section of the survey pertained to the need for 'feedback mechanisms' to facilitate practice change following a learning intervention. Feedback mechanisms in this context, refer to tools or strategies to objectively examine the effectiveness of the attempted practice change (for example, how does the change to electronic flow sheets for the management of diabetic patients impact patient care) and included such interventions as online quizzes or "homework" that could measure learning at regular intervals following a conference, and external practice audits to objectively measure practice change. The core concept described by participants was a need to have 'follow-up' after a learning intervention to both provide support and encourage accountability. The following quotes pertain to the desire for adequate feedback mechanisms.

"[I would like] follow-up calls over a period of time to assess problems in implementation and next steps."

"To encourage change, one has to have meaningful feedback. I.e. is what I am doing making a difference?"

"It helps me if I have some way of measuring whether I've made a change or made a difference and some way of tracking that because I'll go away and come back and forget that I was going to do this great initiative, or start doing it and then forget to look back to see if it actually made a difference."

Clinical Pearls: Several survey participants identified 'information overload' as a barrier to making changes to practice patterns. Essentially, participants stated that CPD is typically laden with large volumes of clinical and scientific information, which can be overwhelming when attempting to translate that information into changes in a busy medical practice. To mitigate the effects of 'information overload' survey participants frequently called for 'clinical pearls' or "concise practice oriented notes" rather than the voluminous handouts, PowerPoint presentations or journal articles that often coincide with conference-based CPD offerings.

Participants suggested that having a large volume of information condensed into “key concepts” would assist them in introducing the concepts into their practice. A physician suggested that this information could be bundled with steps for implementation or “ideas for change” and presented two to four weeks following the CPD event as a reminder for the learner. The core idea expressed by participants however was information that is both condensed and available for reference in the months following a learning event.

“Having it [information/ course content] in a very well laid out easy to use form.”

“Summarize the most important learning points.”

Financial Support for Change: Survey participants spoke about the need for financial support when trying to translate knowledge into practice. Physicians’ comments often illustrated that they were working at maximum capacity in running their clinics and that trying to implement new learning into their well established practice routines represented additional work and often times a disruption to their workflow patterns. In the case of clinic based GPs/FPs, this was viewed as a threat to their ability to manage their practice both clinically and financially. Physicians called for financial supports to aid them through periods of inefficiency which occur as a result of implementing changes. The following quotes illustrate this sentiment.

“Trying to keep up with the bottom line on the economics of running a practice, trying to make a decent income while at the same time trying to have a life outside of medicine interferes with meaningful time to reflect and implement new learning.”

“[I require] a lot of paid time to modify practice and [provide] staff training.”

5. CHRONIC DISEASE MANAGEMENT

Introduction: Physicians were asked to what extent they would be interested in participating in a CPD activity on the following **potential** chronic disease management (CDM) content areas. The responses according to GPs/FPs and Specialists follow:

GPs/FPs

GPs/FPs Responses	Not Interested 1	Somewhat Interested 2	Moderately Interested 3	Very Interested 4	High Level of Interest (Aggregate) ³	Mean Scores
Potential CDM Content Areas:						
Using clinical practice guidelines to enhance patient care	11%	26%	37%	26%	63%	2.79
Incorporating CDM tools into your practice (e.g. diabetes flow sheets, etc.)	16%	21%	38%	25%	63%	2.73
Dealing with patient non-adherence / non-compliance to recommended guidelines	15%	28%	35%	23%	58%	2.65
Using clinical practice audits to enhance care	32%	29%	28%	12%	40%	2.19
Integrating group visits into practice	43%	26%	23%	8%	31%	1.97
Specific CDM topics:						
Diabetes	8%	15%	40%	37%	77%	3.06
Depression/Anxiety	7%	20%	35%	39%	74%	3.05
Kidney Disease	7%	19%	39%	36%	75%	3.03
Hypertension	8%	17%	43%	32%	75%	2.99
Chronic Pain (non-malignant)	8%	24%	34%	34%	68%	2.94
Cancer	7%	22%	42%	29%	71%	2.92
Palliative Care	10%	19%	43%	29%	72%	2.90
Asthma	9%	21%	44%	27%	71%	2.90
Congestive Heart Failure	10%	20%	41%	29%	70%	2.89
Chronic Lung Disease (COPD)	7%	26%	38%	29%	67%	2.88
Mental Illness	10%	25%	35%	30%	65%	2.85
Arthritis/osteoarthritis	10%	21%	45%	25%	70%	2.84
Dementia	11%	27%	31%	31%	62%	2.83
Hepatitis B/C	15%	32%	31%	22%	53%	2.61
Addiction	18%	31%	26%	25%	51%	2.57
HIV/AIDS	35%	37%	16%	12%	28%	2.04

GPs/FPs Chronic Disease CPD Needs: A relatively high proportion of GPs/FPs surveyed expressed interest in CDM content areas related to using clinical practice guidelines to enhance patient care (63%), and incorporating CDM tools into their practice (63%). A moderate proportion of GPs/FPs expressed interest in CDM content related to dealing with patient non-adherence (58%).

³ For the purpose of this analysis, High Level of Interest refers to the aggregate of physicians who indicated they are moderately and very interested in the respective CDM content areas and topics.

Interest levels were lower with regards to using clinical practice audits to enhance patient care (40%) and integrating group visits into practice (31%). In terms of specific CDM topics, over 50% of GPs/FPs surveyed displayed high levels of interest in each of the specific CDM topics provided (most are in the range of 60 – 70%), the only exception being HIV/AIDS for which GPs/FPs reported much less interest (28%).

Specialists

Specialist Responses	Not Interested 1	Somewhat Interested 2	Moderately Interested 3	Very Interested 4	High Level of Interest (Aggregate)	Mean Scores
Potential CDM Content Areas:						
Using clinical practice guidelines to enhance patient care	26%	32%	28%	14%	42%	2.29
Dealing with patient non-adherence / non-compliance to recommended guidelines	36%	25%	26%	13%	39%	2.16
Using clinical practice audits to enhance care	36%	30%	23%	10%	33%	2.05
Incorporating CDM tools into your practice (e.g. diabetes flow sheets, etc.)	42%	25%	20%	13%	33%	2.03
Integrating group visits into practice	70%	15%	12%	4%	16%	1.50
Specific CDM topics:						
Depression/Anxiety	40%	19%	16%	25%	41%	2.28
Chronic Pain (non-malignant)	37%	19%	24%	19%	43%	2.26
Mental Illness	47%	14%	14%	25%	39%	2.18
Addiction	44%	19%	15%	22%	37%	2.17
Diabetes	51%	17%	16%	16%	32%	1.97
Hypertension	51%	20%	15%	14%	29%	1.92
Dementia	56%	15%	13%	16%	29%	1.90
Kidney Disease	56%	18%	14%	12%	26%	1.82
Cancer	53%	23%	13%	11%	24%	1.82
Hepatitis B/C	54%	20%	16%	9%	25%	1.80
HIV/AIDS	53%	23%	15%	9%	24%	1.80
Asthma	57%	19%	12%	12%	24%	1.79
Arthritis/osteoarthritis	58%	20%	14%	9%	23%	1.74
Palliative Care	59%	19%	12%	10%	22%	1.73
Congestive Heart Failure	61%	17%	11%	11%	22%	1.72
Chronic Lung Disease (COPD)	62%	17%	11%	10%	21%	1.70

Specialist Chronic Disease CPD Needs: Survey results demonstrated that Specialists are less interested in both the potential CDM content areas and the specific CDM topics when compared with GPs/FPs.

6. PRIMARY HEALTH CARE RENEWAL

Introduction: Education and training can support physicians with the integration of new primary health care initiatives into their practice. With this in mind, we asked physicians to what extent they would be interested in CPD programs to support this process. Physicians' responses were separated by whether they are GPs/FPs or Specialists.

GPs/FPs

	Not Interested 1	Somewhat Interested 2	Moderately Interested 3	Very Interested 4	High Level of Interest (Aggregate)	Mean Scores
Supporting patient self-management skills	6%	29%	34%	31%	65%	2.90
Training in clinical procedures (e.g. endometrial biopsy, IUD insertions, castings, etc.)	12%	22%	30%	36%	66%	2.89
Implementing disease prevention strategies in practice	8%	27%	38%	27%	65%	2.85
Employing decision support systems - enabled by technology (e.g. PDA, EMR)	15%	24%	27%	35%	62%	2.83
Using clinical guidelines in daily practice	8%	30%	38%	24%	62%	2.80
Using IT tools to identify referral resources	15%	23%	32%	30%	62%	2.76
Adopting Interdisciplinary care models	21%	36%	26%	17%	43%	2.40
Utilizing registries and chart audits	29%	37%	21%	13%	34%	2.17

GPs/FPs - Primary Health Care Renewal: With the exception of adopting interdisciplinary care models (43%) and utilizing registries and chart audits (34%), a high percentage of GPs/FPs indicated they had a high level of interest in the other CPD programs listed. These included training in clinical procedures (66%), supporting patient self management skills (65%), implementing disease prevention strategies in practice (65%), employing decision support systems-enabled by technology (62%), using clinical guidelines in daily practice (62%) and using IT tools to identify referral resources (62%).

Specialists

CPD Programs	Not Interested 1	Somewhat Interested 2	Moderately Interested 3	Very Interested 4	High Level of Interest (Aggregate)	Mean Scores
Employing decision support systems - enabled by technology (e.g. PDA, EMR)	26%	31%	31%	13%	44%	2.31
Supporting patient self-management skills	30%	25%	29%	16%	45%	2.30
Using clinical guidelines in daily practice	22%	36%	30%	11%	41%	2.29
Using IT tools to identify referral resources	33%	23%	31%	13%	44%	2.25
Adopting Interdisciplinary care models	37%	28%	22%	13%	35%	2.11
Implementing disease prevention strategies in practice	36%	31%	26%	8%	34%	2.05
Utilizing registries and chart audits	42%	31%	20%	8%	28%	1.93
Training in clinical procedures (e.g. endometrial biopsy, IUD insertions, castings, etc.)	62%	14%	16%	8%	24%	1.71

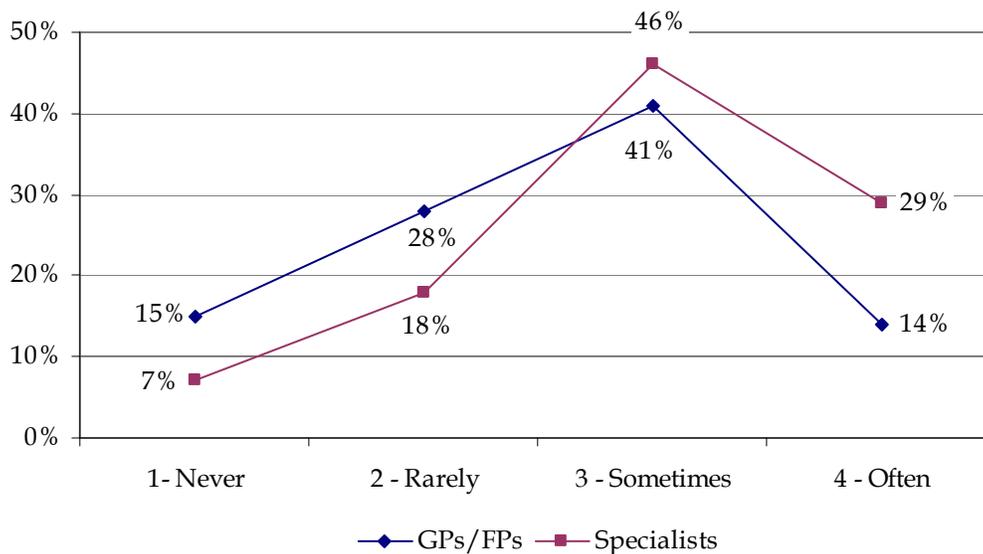
Specialists- Primary Health Care Renewal: Less than 50% of Specialists expressed a high level of interest in the various 'primary care renewal' CPD programs listed above.

7. INTERPROFESSIONAL EDUCATION - GPs/FPs vs. SPECIALISTS

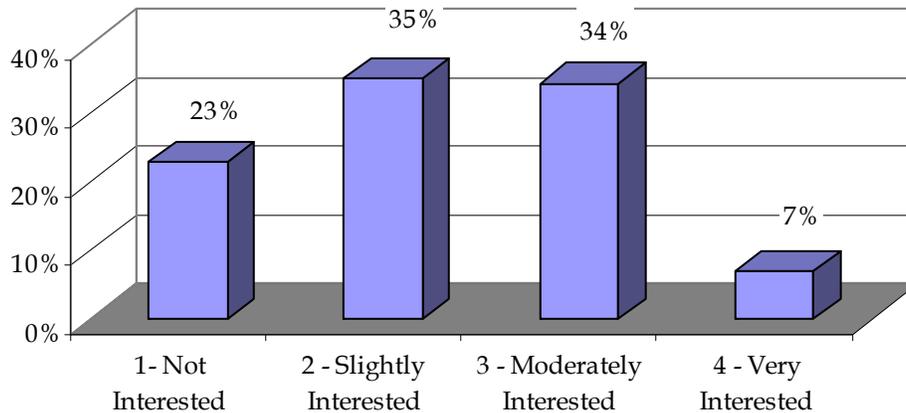
Introduction: The survey asked participants to describe both their current level of participation in interprofessional CPD activities as well as their desire to increase their level of participation in interprofessional CPD. The survey results suggested that at present, approximately 50% of physicians (both GPs/FPs and Specialists) participate in what they would define as interprofessional CPD and that neither group has a strong desire to increase participation.

Factors which may increase participation in interprofessional CPD were identified, and included the following: *increased financial support, as well as specific topics and programs that help to further define the scopes and roles of health care professionals in clinical contexts.* The major disincentive to participation in interprofessional CPD, as expressed by survey participants was *overly general information.*

Survey Data



Current Level of Participation in CPD Activities: Survey participants were asked to indicate the extent to which they currently participated in interprofessional CPD activities (i.e. involving physicians, nurses, physical therapists, and social workers). Approximately 75% of Specialists indicated that they currently participate in interprofessional CPD activities at least sometimes, whereas 55% of GPs/FPs stated the same.



Desire for Increased Participation in Interprofessional CPD: The survey gauged physicians' level of interest in increasing their participation in interprofessional educational activities. Forty-one percent of physicians are at least moderately interested in increasing their participation in interprofessional educational activities; however a very small percentage of physicians indicated they are very interested in increasing their participation in this type of CPD (7%). When comparing GP/FP and Specialist responses to this question, there is no significant difference between the two groups' interest levels in increasing their participation in interprofessional educational activities.

Content Analysis of Qualitative Data

Factors that Might Increase or Decrease Participation in Interprofessional CPD: Survey participants were asked to identify factors that may either increase or decrease their participation in interprofessionally oriented CPD. Incentives to participation cited by GP/FP and Specialist participants were quite similar. Both groups frequently cited that increased financial support for participation would be a powerful incentive as many interprofessional events are currently unsubsidized and require participants to pay themselves. Both groups also frequently cited the need for funding designated to compensate them for time away from their clinics/hospitals while attending interprofessional CPD.

Following financial support, the most frequently cited incentive to increased participation was that the programming offered was in a specific topical area that a) required a team-based approach and b) was pertinent to learners' specific clinical situation. This second incentive was particularly powerful amongst Specialists who often stated the importance of interprofessional CPD being designed to speak to their specific area of medical practice, rather than taking a more general approach.

Participants also (albeit less frequently) spoke to the need for interprofessional CPD that aids in further “defining the scopes and roles” of the members of the health care team involved in the session.

In terms of factors that might decrease participation, a large number of participants identified overly general course content as a disincentive to participation in interprofessionally orientated CPD. Both GPs/FPs and Specialists characterized interprofessional CPD as being “oversimplified” in an effort to provide course content that applies to all members of the health care team.

Furthermore, participants voiced their reluctance to participate in interprofessional CPD based on “fluffy” topics such as team building or any other such “soft” topic that would necessitate a departure from a model of studying evidence-based medicine. Another barrier cited by both groups (but more frequently by Specialists) was lecture-based interprofessional CPD, most notably in the case that the lecturer was a health care provider from a medical specialty other than the one they practiced in.

8. READINESS FOR CHANGE - GPs/FPs vs. SPECIALISTS

Introduction: A major goal of CPD is to improve the performance of the learner by facilitating change in the way he or she behaves in their practice setting. It has been demonstrated however, that traditional CPD models often fail to evoke any kind of measurable change in physician behaviour (Davis, O'Brien, Freemantle. et al., 1999). Prochaska's model of change asserts that in order to enable change in the individual, it is of great importance to measure readiness, or the degree to which the individual is *prepared* to make changes in a given domain (e.g. the adoption of EMR technology). The model states that the learner moves through **five predictable stages towards change:** (Prochaska et al., 1992)

- 1) pre-contemplation, with no perceived need or intention to change;
- 2) contemplation, with awareness of the problem but no commitment to take action;
- 3) preparation for action that combines intention and initial behaviour change;
- 4) recent change with significant modification of behaviour; and
- 5) maintenance, with sustained behavioural change

The implications of this model for CPD providers are profound as it aims to help educators link the appropriate CPD intervention strategy (e.g. conference or small group workshop, etc.) with a particular phase of readiness, with the goal of moving the learner sequentially through all five stages resulting in sustained behavioural change (Parker, Sagar and Parikh, 2001). The present survey assessed physician readiness across a variety of domains.

Survey Results

Changes to practice based medical systems - GPs/FPs	I am not aware of this	I'm thinking about taking this step but would like more information	I am currently making changes in this area	I am currently doing this and am working to maintain it	I don't have any plans to make this change
Using an electronic medical record	3%	39%	9%	25%	24%
Creating and using patient registries for the management of chronic disease and prevention	5%	37%	23%	21%	14%
Using PDAs as a point of care information resource as a component of a regular patient visit	3%	31%	13%	35%	19%
Implementing a practice website	12%	26%	9%	8%	45%
Working in Multidisciplinary Teams	7%	25%	7%	29%	32%
Using new CDM tools in practice (e.g. CDM flow sheets and 'Toolkit')	4%	20%	22%	45%	9%
Implementing 'same day' / 'Open Access' appointment scheduling	13%	16%	12%	37%	23%

GPs/FPs-Readiness for Change: Survey results showed that a moderate proportion of GPs/FPs are in a contemplative state (Stage 2) with respect to using an electronic medical record (39%) and creating and using patient registries for the management of chronic disease and prevention (37%). This level of readiness warrants educational interventions aimed at providing basic information about the use of these tools in the practice context. With regards to the use of PDAs as a point of care information resource as a component of a regular visit, a moderate proportion of GPs/FPs are in a contemplative phase (31%), and a fair portion were in a more advanced phase requiring ongoing support to sustain this behaviour (35%). A large proportion of GPs/FPs were also in an advanced stage of readiness with respect to using new CDM tools in practice (45%) and implementing 'same day' open access appointment scheduling (37%).

GPs/FPs sampled in the survey demonstrated that there is a diversity of levels of change readiness for working in multidisciplinary teams with 25% of participants indicating that they are thinking about taking this step but requiring more education, 29% stating that they are currently doing this and working to maintain it and 32% expressing that they have no plans to make any changes in this regard. The only 'medical system' change for which participants were not desiring to make any changes was "implementing a practice website" to which nearly half (45%) of the physicians sampled indicated that they had no plans to make changes.

Changes to practice based medical systems - SPECIALISTS	I am not aware of this	I'm thinking about taking this step but would like more information	I am currently making changes in this area	I am currently doing this and am working to maintain it	I don't have any plans to make this change
Using PDAs as a point of care information resource as a component of a regular patient visit	12%	35%	9%	13%	31%
Using an electronic medical record	4%	32%	18%	27%	19%
Implementing a practice website	14%	27%	8%	10%	41%
Creating and using patient registries for the management of chronic disease and prevention	23%	25%	7%	8%	37%
Using new CDM tools in practice (e.g. CDM flow sheets and 'Toolkit')	29%	25%	7%	3%	37%
Implementing 'same day' / 'Open Access' appointment scheduling	28%	12%	7%	8%	45%
Working in Multidisciplinary Teams	8%	11%	7%	52%	22%

Specialists-Readiness for Change: Results indicate that Specialists are largely in a "pre-contemplative" phase of readiness in many of the above areas. Specialists require more information-based education in the use of PDAs and EMRs and more support aimed at sustaining behaviour for work in multidisciplinary teams. Fifty-two percent of Specialists surveyed stated that they were currently working in multidisciplinary teams. Support for these individuals should be targeted at assisting with maintenance.

9. INCENTIVES TO YOUR PARTICIPATION

Introduction: Physicians were asked to indicate the strength of various incentives to their participation in CPD. The results showed that the most powerful incentives for physician participation were CPD delivered close to home and CPD for study credits. Content analysis of an open-ended section in the survey that asked participants to comment on what attracted them to CPD events they had attended in the past revealed that information quality and learning format were also important variables.

Incentives	Not an Incentive 1	Slight Incentive 2	Moderate Incentive 3	Strong Incentive 4	High Incentive (Aggregate) ⁴	Mean Scores
CPD is delivered in your community (or in close proximity)	6%	14%	39%	41%	80%	3.16
Activity is approved for professional study credits (e.g. CFPC, RCPSC or AMA, etc)	12%	17%	34%	38%	72%	2.98
Familiarity with event or event organizers	25%	25%	36%	14%	50%	2.41
Family activities included in CPD schedule	51%	19%	17%	13%	30%	1.93
Social activities included in CPD event	52%	29%	13%	7%	20%	1.75
Child care available	73%	9%	8%	11%	19%	1.56

Incentives to Participation in CPD: Two incentives that a high percentage of physicians indicated may increase their willingness to participate in CPD activities were: CPD delivered in their community (80%), and activities approved for professional study credits (72%). Fifty percent of participants stated that familiarity with event or event organizers was an incentive, whereas a low percentage of participants identified family (30%) or social (20%) activities in the schedule or the availability of child care (19%) as being incentives.

Contents Analysis of Qualitative Data

Information Quality: Physicians stated that a high degree of information quality in CPD offerings is a major incentive to their participation. Physicians also identified several different factors as contributing to the information quality of CPD.

⁴ For the purpose of this analysis, High Incentive refers to the aggregate of physicians who indicate the specified incentives are a moderate or a strong incentive.

First, the presence of a notable speaker was cited by a large number of participants as an important variable in selecting CPD. Of related, but secondary importance to physicians was the group associated with organizing the event. Specifically, physicians indicated that they would be more likely to attend an event being put on by a group who had organized an event they had been to and enjoyed in the past.

The presentation of new clinical evidence, and "*information dense*" sessions were also frequently cited as strong incentives. The most frequently cited 'information quality' variable however was topic pertinence. Both GPs/FPs and Specialists stated that the topic being presented had to not only fill some sort of clinical information gap, but also had to pertain in a 'real' sense to the needs of their patient population and be *readily implementable* in their clinical setting. These quotes pertain to 'information quality'

"When I go to a conference, I want to be able to apply what I learned very first case on Monday morning. I want it to be that practical. I'm getting less and less interested in the academic minutiae and I want to know how to solve problems. I think I've got a pretty good grasp on the basics, but what do you do when you've got somebody who's a little bit different? A patient that doesn't quite fit the protocol or who's outside the mould. And those are the kinds of things I like to learn about. So I really look for something that's really practical when I'm trying to choose my CME courses."

"Relevant, high wheat to chaff ratio. I want high density learning and real world examples otherwise you're wasting my time."

"Topics highly relevant to my practice population with case-based materials included in the presentation; expert presenters not only in content but in methods of presentation"

Learning Formats: Two seemingly contrasting learning formats were frequently cited by participants as being incentives for their participation in CPD. A large number of participants called for the provision of additional *small group learning formats* that allow for case-based learning, maximum opportunity for dialogue between participants and the chance to rehearse and perfect newly acquired skills. Small group learning formats were often cited as beneficial for the acquisition of procedural clinical skills and the development of competencies in the use of new technologies. Physicians often noted that these small group sessions could be shorter than regular conferences and workshops and offer the added benefit of being customized to respond to very specific learning needs, ensuring a high level of 'information density' not always attainable when designing broader programs for larger audiences.

Alternatively, a number of physicians also voiced their support for the opposite model of CPD; that is, large multi-day conferences in exciting locales which enable the physician to combine their CPD with a vacation or travel experience. These participants frequently identified Hawaii and Whistler as ideal locations for such offerings.

10. BARRIERS TO PARTICIPATION

Introduction: In this section, physicians were asked to state the frequency with which they encountered a number of barriers to their participation in CPD activities. The specific barriers included in this analysis were related to: a) time b) finance c) technology and d) access and awareness. Physicians were asked to use the list of barriers below to indicate the extent to which each item poses a **barrier to their participation in CPD**. Their responses are provided in the table below.

	Never a Barrier 1	Rarely a Barrier 2	Sometimes a Barrier 3	Very Frequent Barrier 4	Frequent Barrier (Aggregate)	Mean Scores
Time:						
Protecting family time	7%	10%	39%	44%	83%	3.19
Timing of CPD programs	2%	10%	65%	23%	88%	3.09
Practice too busy	7%	12%	48%	34%	82%	3.09
Lack of sufficient locum coverage	33%	22%	22%	23%	45%	2.34
Finance:						
Cost of travel	9%	24%	42%	25%	67%	2.83
Loss of income	14%	23%	31%	32%	63%	2.81
Cost of CPD Registration/Fees	10%	24%	42%	24%	66%	2.80
Technology:						
Lack of comfort with PDA (Personal Digital Assistant such as Palm Pilot or similar Handheld or Blackberry)	42%	20%	21%	18%	38%	2.14
Lack of appropriate computer hardware/software	45%	27%	22%	6%	28%	1.89
Lack of comfort with computer and programs	52%	19%	21%	7%	29%	1.83
Lack of High-speed Internet access	68%	19%	9%	4%	13%	1.49
Educational Barriers:						
Lack of awareness of resources to support the costs	30%	30%	27%	13%	40%	2.22
Lack of timely notification about upcoming CPD events	30%	35%	29%	7%	36%	2.13
CPD not available locally	42%	32%	18%	8%	26%	1.93

Barriers Table: Survey results showed that time and finance-related variables represent frequent barriers for physicians when it comes to accessing CPD. Specific time-based barriers included: the desire to protect family time, challenges related to the timing of CPD programs, practice demands that don't leave time for CPD and challenges in finding locum coverage. Physicians indicated that barriers related to technology and education were less significant. Physicians' responses to questions about 'barriers to accessing CPD' are summarized on the following page.

1. *Time*: Over 80% of physicians said the timing of CPD programs (88%), the desire to protect family time (83%), and time spent managing their practice (82%), represented frequent barriers to their participation in CPD. The only significant difference between the responses of GPs/FPs and Specialists within this subsection is that more Specialists (47%) said that lack of sufficient locum coverage is never a barrier, compared to 16% of GPs/FPs – this suggests that lack of sufficient locum coverage is mainly a barrier for GPs/FPs.
2. *Finance*: Approximately 65% of physicians identified financial factors such as the cost of travel (67%), the cost of CPD registration/fees (66%), and the loss of income (63%) as frequent barriers to their participation in CPD. Within this subsection, there was a significant difference between GPs/FPs and Specialists opinions in that a much larger percentage of GPs/FPs (46%) say that loss of income is a very frequent barrier, compared to 22% of Specialists who said the same – this suggests that loss of income due to participation in CPD represents a more significant barrier for GPs/FPs.
3. *Technology*: Generally speaking, neither a lack of access to technology nor a lack of comfort with technology frequently prohibits physicians from accessing CPD.
4. *Educational Barriers*: Survey results indicate that neither the location nor advertising of CPD events are significant barriers to accessing CPD. Over 50% of physicians stated that a lack of locally available CPD (74%), lack of timely notification about upcoming CPD events (65%), and lack of awareness of resources to support the costs (60%) are not substantial barriers for them.

Content Analysis of Qualitative Data-Barriers to Participation in CPD

Opportunity Cost of CPD: When asked to comment on barriers to participation in CPD, physician participants indicated that several variables, namely the desire to protect personal time, the demands of a busy practice and the rising cost of CPD all interact to make accessing CPD a challenge. Physicians seemed to highlight the high '*opportunity cost*' of CPD as a significant barrier, meaning that choosing to participate in CPD means making a sacrifice personally, financially and professionally. Specifically, they voiced concern that at present CPD is not adequately funded by the BCMA or health authorities, which makes participating in CPD a costly and ineffective use of time.

The following quotes illustrate the concerns of physicians:

"If I miss a full day of work, the BCMA will only cover \$50, as I am paid sessionally"

"There never seems to be enough time outside of work. Family commitments come 1st."

"The time issue is huge and so it's finding ways that, I know there are ways I can become more efficient in my practice, more efficient in my ability to seek out information, but I don't really have the time to spend learning about how to do that. So there's that initial investment time, that's required I think for some CPD activities. Once you're up and running and know it, it might save you time but finding the time to do that initial investment in learning is very difficult."

Timing of CPD Programs: Another significant barrier for physicians is the timing of CPD programs. Physicians said that most CPD programs require them to leave their office/hospital and disrupt their working day in order to attend a session. Physicians suggest this does not fit with their established workflow patterns and disrupts the flow of their clinic. Physicians also articulated the challenges associated with getting a locum to cover their clinic when they wanted to attend a multi-day course.

Content: Physicians identified barriers related to the content of the available CPD. Several indicated that they would like to see a shift away from industry-driven CPD while others commented that they feel that the 'credit counting' aspect of CPD impedes them from selecting CPD based on its "clinical relevancy". Several Specialists stated that they faced challenges in locating CPD within Canada that was specific enough to their clinical learning needs to be worthwhile attending. Further, these participants stated that they often had to travel internationally to access relevant CPD, often without any financial support.

"My view is that CPD needs to be much more physician driven and significantly less industry driven. I believe that UBC-CPDKT could play a very strategic and leading role in facilitating such a paradigm shift by developing materials for peer-based learning."

"I do not like to attend drug company sponsored events or especially to hear drug company sponsored speakers, and this certainly enters into my decision as to whether to attend an event or not."

"Hopefully if you participate in CPD it won't be indoctrinated by the drug industry. I mean I basically just stopped going to those evening things now. You have to fight your way through so many booths, banners and free mugs before you actually get to anything educational."

Solutions

Decreasing the 'Opportunity Cost' of Accessing CPD: Physicians offered several strategies to mitigate some of the barriers listed above and make their participation in CPD more accessible. To decrease the 'opportunity cost' of accessing CPD, physicians called for increased funding for office overhead costs and travel costs coupled with an increased pool of locums to cover clinical duties. Physicians suggested both these solutions as viable strategies to minimize the impact (both in financial and patient care terms) of leaving their clinic to attend CPD.

In an effort to combat the 'timing' issue, physicians called for CPD that would better fit into their workflow and minimize disruption. They suggested that an increase in technology-enabled CPD, such as internet and videoconference-based sessions that would allow them to access CPD without having to travel.

"I'm not saying that online learning is the end all and be all, but for some people it's very helpful. I certainly see at our hospital rounds there is sort of a steady cadre of physicians that attend regularly, but even over the last 10-15 years, that number has slowly been dwindling. So I think that physicians are feeling really pressured for time and if they're going to do CPD they would want to do it where and when it fits their schedule so it doesn't sort of penalize them either through family time or clinic time... so they're looking for that flexibility."

A small subset of physicians suggested that offering locally-run, small-group, mini courses between one and two hours in duration would allow physicians to engage in a meaningful CPD session while minimally disrupting their workflow. A third solution put forth by physicians was to have educational consultants come to the physician's clinic or hospital setting as an alternative to having physicians leave the office to access CPD.

Although both groups called for increased funding for CPD, Specialists specifically called for increased financial support for attending internationally-run CPD, as this would allow them to access the CPD that would best address their specific learning needs irrespective of the location of the educational offering.

Improving Content: A number of physicians called for more 'physician-driven' CPD to ensure that content is evidence-based and responsive to the learning needs of course participants. Physicians also called for more small-group CPD offerings designed to address specific learning needs and allow the participants to take a "hands on" approach to learning new procedural skills and using new technologies in the workplace.

Raising Awareness: Several physicians indicated that they are not fully aware of the CPD offerings available to them. They suggested that a centralized website, listing available CPD options by topic, location and date would assist them to plan in advance and work CPD around their clinical schedules more effectively. This finding contradicts the qualitative data analysis which suggests that physicians do not require this type of support.

"I have to search for CME in areas of interest...it would be nice to have some other notification system, or centrally organized, easily searchable listing."

"A centralized website or e-mail with multiple educational offerings listed (from all various sources) would help in advance planning and choosing events."

"Not knowing that conferences exist is a barrier. I think there's probably a lack of information about what's happening in the Lower Mainland."

11. ORGANIZATIONAL ROLES IN CPD – GPs/FPs vs. SPECIALISTS

Introduction: Physicians were asked to provide their opinions regarding the role(s) they believe various professional, governmental, academic, corporate, and other bodies should play in CPD. The roles that participants were able to select included *funding, developing content, organizing and delivering, setting standards and publicizing*. It should be noted that the physicians' responses within this section are not mutually exclusive within the categories. That is, if for example a physician selected the College(s) of Family Physicians as being responsible for funding CPD; this did not preclude them from selecting another organization as also being responsible for funding CPD.

Funding

	GPs/FPs	Specialists
College(s) of Family Physicians (BCCFP, CFPC)	55%	37%
Royal College of Physicians and Surgeons (RCPS)	33%	61%
British Columbia Medical Association (BCMA)	67%	70%
College of Physicians and Surgeons of BC	43%	53%
Canadian Medical Association (CMA)	53%	55%
Specialty organizations (e.g. Paediatric Society, Emergency Medicine, etc)	24%	41%
Health Authorities	80%	80%
UBC CPD-KT (CME)	28%	41%
UBC academic departments (e.g. FP, Medicine, O&G, etc)	23%	37%
Pharmaceutical companies	62%	73%
Other for-profit companies	53%	65%
Hospital-organized CME (e.g. St. Paul's)	30%	40%
Local CME Committee	21%	25%

Eighty percent of both GPs/FPs and Specialists (80% respectively) were largely in favour of having the health Authorities be responsible for funding CPD. Two other groups that a high percentage of both GPs/FPs and Specialists suggested should be responsible for funding CPD are the BCMA (67% and 70% respectively), and pharmaceutical companies (62% and 70% respectively).

Developing Content

	GPs/FPs	Specialists
College(s) of Family Physicians (BCCFP, CFPC)	81%	45%
Royal College of Physicians and Surgeons (RCPS)	51%	70%
British Columbia Medical Association (BCMA)	40%	42%
College of Physicians and Surgeons of BC	39%	47%
Canadian Medical Association (CMA)	46%	51%
Specialty organizations (e.g. Paediatric Society; Emergency Medicine, etc)	66%	79%
Health Authorities	23%	15%
UBC CPD-KT (CME)	76%	68%
UBC academic departments (e.g. FP, Medicine, O&G, etc)	78%	73%
Pharmaceutical companies	11%	10%
Other for-profit companies	7%	7%
Hospital-organized CME (e.g. St. Paul's)	73%	71%
Local CME Committee	68%	60%

Eighty-one percent of GPs/FPs stated that the College(s) of Family Physicians should be responsible for developing content in CPD whereas Specialists most frequently identified speciality organizations (79%) as being responsible for content development. Other organizations that were frequently cited as being responsible for developing CPD content were UBC CPD-KT (76% and 68% respectively), UBC academic departments (78% and 73% respectively), hospital organizations (73% and 71% respectively). Not surprisingly, Specialists frequently identified the Royal College of Physicians and Surgeons (70%) as being responsible for developing CPD content.

The survey results demonstrate that neither GPs/FPs nor Specialists view the health authorities, pharmaceutical companies, or other for-profit companies as having a role in developing content in CPD.

Organizing and Delivering

	GPs/FPs	Specialists
College(s) of Family Physicians (BCCFP, CFPC)	72%	44%
Royal College of Physicians and Surgeons (RCPS)	40%	61%
British Columbia Medical Association (BCMA)	55%	58%
College of Physicians and Surgeons of BC	38%	46%
Canadian Medical Association (CMA)	52%	58%
Specialty organizations (e.g. Paediatric Society, Emergency Medicine, etc)	53%	76%
Health Authorities	39%	31%
UBC CPD-KT (CME)	77%	68%
UBC academic departments (e.g. FP, Medicine, O&G, etc)	72%	70%
Pharmaceutical companies	30%	27%
Other for-profit companies	24%	20%
Hospital-organized CME (e.g. St. Paul's)	82%	82%
Local CME Committee	72%	70%

Both GPs/FPs and Specialists were principally in favour of hospital-organized CME as having responsibility for the organization and delivery of CPD. GPs/FPs also specially favoured UBC CPD-KT while Specialists additionally favoured specialty organizations (76%) for the organization and delivery of CPD. Both groups also frequently identified UBC academic departments, and local CME committees as being responsible for the same.

Setting Standards

	GPs/FPs	Specialists
College(s) of Family Physicians (BCCFP, CFPC)	78%	53%
Royal College of Physicians and Surgeons (RCPS)	55%	83%
British Columbia Medical Association (BCMA)	38%	39%
College of Physicians and Surgeons of BC	74%	69%
Canadian Medical Association (CMA)	55%	48%
Specialty organizations (e.g. Paediatric Society, Emergency Medicine, etc)	52%	71%
Health Authorities	21%	14%
UBC CPD-KT (CME)	50%	44%
UBC academic departments (e.g. FP, Medicine, O&G, etc)	52%	57%
Pharmaceutical companies	7%	3%
Other for-profit companies	5%	2%
Hospital-organized CME (e.g. St. Paul's)	43%	41%
Local CME Committee	37%	38%

A large proportion of GPs/FPs indicated that the College(s) of Family Physicians (78%), and the College of Physicians and Surgeons of BC (74%) should be responsible for setting standards in CPD. In comparison, Specialists indicated that the Royal College of Physicians and Surgeons (83%), and specialty organizations (71%) should be responsible for setting standards in CPD. Generally speaking, the survey results revealed that GPs/FPs and Specialists prefer their respective College (CFPC and RCPS respectively) to be responsible for setting standards in CPD. Furthermore, the data shows that GPs/FPs and Specialists do not view pharmaceutical companies, other for-profit companies, and to some extent health authorities as having a role in setting standards in CPD.

Publicizing

	GPs/FPs	Specialists
College(s) of Family Physicians (BCCFP, CFPC)	68%	48%
Royal College of Physicians and Surgeons (RCPS)	35%	67%
British Columbia Medical Association (BCMA)	71%	75%
College of Physicians and Surgeons of BC	43%	62%
Canadian Medical Association (CMA)	70%	69%
Specialty organizations (e.g. Paediatric Society; Emergency Medicine, etc)	41%	69%
Health Authorities	51%	44%
UBC CPD-KT (CME)	56%	59%
UBC academic departments (e.g. FP, Medicine, O&G, etc)	44%	60%
Pharmaceutical companies	38%	44%
Other for-profit companies	32%	34%
Hospital-organized CME (e.g. St. Paul's)	59%	68%
Local CME Committee	56%	59%

A high percentage of both GPs/FPs and Specialists are in favour of the British Columbia Medical Association (71% and 75% respectively), and the Canadian Medical Association (70% and 69% respectively) being responsible for publicizing CPD. Specialists also identified specialty organizations (69%) as being responsible for publicizing CPD.

12. FINANCIAL AND OTHER RESOURCES FOR CPD FOR PHYSICIANS

Introduction: Within this section, physicians were asked to rate the degree to which they agree or disagree with specific statements regarding financial and other resources for CPD for physicians.

Survey Data

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	Combined Agreement	Mean Scores
An up-to-date centralized directory of physician CPD activities within BC is needed.	2%	7%	23%	40%	29%	69%	3.88
There is a need for a CPD program that supports physicians returning to work after an extended leave of absence.	2%	5%	30%	41%	23%	64%	3.79
Physicians should be paid to participate in CPD activities.	5%	12%	25%	29%	29%	58%	3.67
The administrative requirements for applying and receiving CPD funding are a barrier.	3%	17%	29%	35%	17%	51%	3.45
Existing financial support programs are sufficient.	22%	40%	25%	11%	2%	13%	2.31

Financial and Other Resources for CPD: Although most of the statements pertaining to financial resources were met with agreement from participants, the need for an up to date, centralized directory of CPD activities within BC (69%) and a CPD program that supports physicians returning to work after an extended leave of absence (64%) were most strongly agreed with.

Slightly more than 50% of physicians agreed with the statements that physicians should be paid to participate in CPD activities (58%) and that the administrative requirements for applying for CPD funding are a barrier (51%). Less than one-quarter of physicians are in agreement that existing financial support programs are sufficient.

Content Analysis of Qualitative Data

Administrative Support: Survey participants often spoke to the administrative challenges associated with accessing CPD funding. Primarily, participants expressed a lack of awareness of potential CPD funding sources and called for increased advertisement of these resources. A secondary administrative concern surrounded the overwhelming amount of paperwork required to apply for CPD funding. Several participants suggested that they would be more inclined to participate in CPD if this administrative burden was lessened and application for funding was streamlined via increased advertisement of resources and decreased application burden. A number of participants called for an all purpose centralized CPD funding database which would allow them to a) determine what CPD funding from the colleges and hospitals was available and, b) apply on-line for CPD funding.

"I would like to have one site where I can find out how much CPD funding I have left and a mechanism that allows me to document activities and be refunded...all on-line, all on the same site."

Funding: Several participants stated that a major issue impeding their access to CPD was that the cost of CPD events had risen over time without a commensurate increase in funding to support participation in these events by offsetting time away from patient practice. Participants called for an increase in CPD funding to narrow this gap and make accessing CPD more realistic. The following quotes illustrate this sentiment.

"Funds to support CPD seem to have lagged behind costs. We need to promote more funding from government, hospitals and industry."

"The cost of conferences and travel has gone up so much in the past few years that the funding for CPD is insufficient."

"I'd like to raise the point of the funding of conferences because they're getting to be very pricy. When you start factoring in time away from your practice, the travel costs, the accommodation costs, and tuition which is, you know, currently running anywhere from about \$750 to \$1000 US for most conferences and that might be only for a 2 or 3 day conference. All of a sudden it starts to become a very pricy issue and if you want to stay, at least in my field, if you want to stay on top of things, you've got to go to at least one, preferably two a year. It starts to become a financial burden. It's kind of too bad that there wasn't some way of providing funding. I know doctors are seen as being well-paid but even when you do the math and the accounting is all settled, even by the time you write it off, it's pretty hard to get to and from a course without having spent several thousand dollars for maybe only two or three days and that's it. It's a significant cost!"

In terms of who should contribute financial resources to address the growing gap between costs and funding, physicians most often identified the BCMA and health authorities as being responsible. Interestingly, a small subset of participants stated that physicians should bear more financial responsibility for their own professional development.

Community Resource Information: Participants stressed the need for more detailed information about the medical resources available to them in their community. Further, participants voiced their desire to have a broader perspective of the care networks available to their patients in the VCHA.

"From an addictions perspective, what I'd love, especially being in Vancouver Coastal Health, would be knowing more about our community resources... I have no clue and I've been doing this for years and every time there's a new something, a new change, we're the last ones to find out and it's hard to direct care. I may know my addiction part very well but I have no clue of how it interacts with the rest of what's going on in Vancouver Coastal Health."

"Vancouver Coastal Health could have a web where you can find all the different resources that are listed. I had no idea there was an anxiety clinic at UBC until 6 months ago that was perfect for some of my patients or where the different detox centers are... if Vancouver Coastal Health could maintain that it would help me to know what's going on and where to refer people, what's the phone number, what's their website, and give that to the patient to do their homework."

V. RECOMMENDATIONS

Introduction: The core concepts which emerged from this needs assessment have been distilled into a set of recommendations which the reader may practically apply towards the design of responsive CPD programming. This set of recommendations takes on two forms: a) **lessons learned** from the data, which highlight important themes that may assist the reader in understanding the broader context in which the needs of CPD participants must be evaluated and supported and b) **synthesized strategies** or recommendations for change, which take into account all of the data and physician input received from this needs assessment and aim to offer concrete suggestions to improve CPD design and delivery.

Lessons Learned

1. Lesson: Sustained Financial Support to Enable Practice Change:

Incorporating newly acquired knowledge through CPD events into the context of clinical practice frequently results in temporary practice inefficiencies. Financing to support implementation and compensate physicians and associated members of their care delivery team through 'the learning curve' is likely to support sustained efforts towards integration of new knowledge into workflow patterns.

2. Lesson: Educate Physicians About the Effectiveness of Lesser Known Interventions:

The survey results indicated that physicians prefer CPD intervention strategies that are familiar to them and that they have previously taken part in. Furthermore, a great number of physicians identify conferences as being effective educational mediums for the promotion of knowledge translation, an idea which is challenged in recent literature (Davis et al., 2003). It is necessary to attempt to raise the awareness of VCHA physicians to other types of intervention styles that might more effectively impact change in their practice patterns.

3. Lesson: Invest in Ascertaining Unperceived Needs:

Although needs assessments are reliable instruments for gathering information on the perceived clinical and educational needs of physicians, they fail to address the needs that physicians may not be aware that they have. An investment in understanding the *unperceived needs* of the VCHA physician community is therefore necessary to design and deliver CPD programming that is more fully responsive to gaps in knowledge.

4. Lesson: Assess Learner Readiness:

Traditional CPD program design has been largely dependant on the use of needs assessments to determine the type of **content** that may be appropriate for the learner. A greater understanding of *learner readiness for change* may be warranted to design effective interventions for sustained behavioural change.

Synthesized Strategy Areas: Recommendations for Change

Cases within the following eight strategy areas, in which proposed strategies apply to either GPs/FPs or Specialists have been noted. In cases in which the strategy refers to physicians in general, there were no significant differences found between the groups.

1. CPD for the Integration of eHealth Technologies into Practice

- 1.1. Increase CPD course offerings for GPs/FPs in the following technology areas; 1) basic and advanced EMR usage 2) use of PDAs to access clinical and pharmaceutical information 3) use of internet to access clinical update summaries and 4) use of CDM toolkit. Technology-based CPD for Specialists should be focused on training in the use of the EMR.
- 1.2. Provide small group 'hands-on' learning opportunities that allow physicians to increase competency through direct use.
- 1.3. Support the entire medical office staff team through the technology adoption process. Change management must occur at the organizational (i.e. physician, nurse, MOA, etc) as opposed to the individual (i.e. physician) level.
- 1.4. Design CPD which assists physicians in selecting the technologies that will most dramatically improve clinical efficiency.
- 1.5. Identify technology champions across the province that can inform, facilitate and sustain the uptake of new technologies.

2. Designing CPD that is Responsive to Physician Preference

- 2.1. Increase the availability of local, half day courses that enable physicians to access “bite-sized” pieces of CPD without having to make major financial concessions due to time away from their practice.
- 2.2. Focus on CPD offerings which allow physicians to interact with new technologies and gain expertise in usage through direct experience.

3. Strategies for Knowledge Translation

- 3.1. Support alternative (alternative to didactic learning) models of CPD that assist the learner in incorporating newly acquired information into practice. Examples that may support the knowledge translation process include: participation in communities of practice, coaching from an outside consultant and opportunities to observe and model after other practices.
- 3.2. Re-engage learners with CPD content in the months following an educational event and support the ongoing integration of course content into practice.
- 3.3. Develop ‘*feedback mechanisms*’ and learning tools which a) support the retention of knowledge following a CPD event (e.g. online tests and quizzes) b) measure the degree to which the learner is making changes in their practice patterns following the acquisition of new information and c) assess the positive or negative impact that that the change is having on their practice (e.g. commitment to change exercises).
- 3.4. Provide ‘*clinical pearls*’ or condensed information packages designed to summarize the core concepts of an educational event. This may serve to combat “information overload” by ensuring that the central message of the CPD event is emphasized for the learner.

4. CPD for Interprofessional Education

- 4.1. Focus on the ‘*how*’ of working in clinical teams as opposed to the ‘*what*’ of disease entities. However, when designing interprofessional CPD around a specific disease, determine which members of the health care team might be involved and develop CPD content which enriches team members understanding of the scopes and roles required.
- 4.2. Avoid designing overly simplified interprofessional course content which fails to address the learning needs of physician audiences.

5. Creating Incentives to Encourage Participation in CPD

- 5.1. Offer increased funding to compensate physicians for lost revenues, office overhead and travel costs associated with participating in CPD events. This is particularly important for specialists who are often required to travel internationally to access CPD relevant to their specific field.
- 5.2. Provide funding to subsidize the cost of CPD and thereby lower the cost of event registration.
- 5.3. Increase the availability of technology-enabled CPD activities (i.e. CPD via videoconference, PDA or internet) to mitigate some of the challenges associated with accessing traditional, non-local CPD.
- 5.4. Offer RCPSC or CFPC study credits for participation in any CPD activities

6. Strategies to Engage Physicians in CPD

- 6.1. Create a CPD program designed to support physicians returning to work after an extended leave of absence. This program could be created in cooperation with the College of Physicians and Surgeons of BC and in conjunction with appropriated educational bodies pertinent to the discipline concerned.
- 6.2. Establish a centralized website or directory which lists upcoming CPD event *topics, timing and location* and allows physicians to apply for funding on-line. Establishing all of these CPD resources in one place may reduce challenges associated with accessing CPD while simultaneously raising awareness. This resource could be further expanded to include physician referral resources.
- 6.3. Identify existing medical special interest or working groups (e.g. Physician User Groups, Communities of Practice, problem-based learning groups, group practices, physician-only or interprofessional teams) and design CPD which is responsive to their specific learning needs.
- 6.4. Fund the improvement of the technological infrastructure of primary care clinics so that GPs/FPs have adequate access to information technology tools (e.g. high-speed internet, internet protocol videoconferencing) that may be used in both educational and clinical contexts.
- 6.5. Provide funding to assist in the acquisition and use of new technologies (e.g. PDA programs, EMR software) and support training in the use of these tools to encourage long term adoption.

7. Organizational Roles in CPD

- 7.1. Funding to Support CPD should be sought from Health Authorities, BCMA and industry partners.
- 7.2. Preferred content developers would include CFPC, RCPSC, specialty organizations, UBC CPD-KT, other UBC academic departments, hospitals and local CME committees.

8. Designing CPD for Improved Chronic Disease Management

Note: the following recommendations relate to survey data that highlight the CPD needs specific to GPs/FPs in the VCHA and are not related to the Specialist group surveyed.

- 8.1. Expand on existing initiatives designed to help GPs/FPs streamline the management of CDM patients in their clinic.
- 8.2. Continue to support and develop CPD specifically targeted at assisting GPs/FPs with a) the use of clinical practice guidelines to enhance patient care, b) the incorporation of CDM tools into their practice and c) the management of non-compliant patients.
- 8.3. Focus on creating CPD for the following diseases: Diabetes, Depression/Anxiety, Kidney Disease, Hypertension and Palliative Care.

Conclusions

This needs assessment contributed to CPD research in a number of key areas. First, it provided a comprehensive picture of the perceived learning needs of VCHA physicians, both in terms of the types of information that is needed to meaningfully improve practice as well as the learning formats that physicians prefer to participate in. Secondly, this needs assessment examined the viability, from the physician perspective, of strategies designed to promote knowledge translation and ensure that information gleaned from CPD activities is incorporated into the learner's workflow patterns. Finally, this evaluation highlighted the roles and responsibilities of several stakeholder groups in the funding, design, organization and delivery of CPD.

This project also made significant progress towards engaging VCHA physicians in a focused dialogue concerning their CPD needs. Further, the needs assessment survey produced a surprisingly high response rate of 20% which suggests that this project addressed an area of significant importance for VCHA physicians. It is our hope that this initiative served to not only provide valuable information for CPD providers, but also raised VCHA physician awareness regarding the types of resources that may be available to aid them in lifelong learning.

VI. FUTURE RESEARCH DIRECTIONS & NEXT STEPS

Future Research Directions

Future research directions include two main categories: 1) further in-depth analysis of existing data collected in the needs assessment; and 2) new areas of research based on emergent themes from this study. Each of these directions is discussed below.

Further Analysis of Existing Data

Given that the objective of this needs assessment was to examine physician CPD needs across a great *breadth* of topical areas, it may be prudent to invest resources in the further examination of specific research topics within this report in order to gain a greater *depth* of understanding in any one domain. This process may enable researchers, CPD providers and VCHA physicians to gain an enriched understanding of CPD needs within a specific area. Research topics addressed within this report suitable for future examination include (but are not limited to):

- Preferred formats for CPD participation
- Specific clinical learning need areas for VCHA physicians
- Strategies to promote knowledge translation
- Strategies to integrate eHealth technologies into practice
- CPD to support the management of patients with chronic diseases
- Physician readiness for behavioural change
- Barriers to CPD participation
- Incentives to CPD participation
- Organizational roles and responsibilities in CPD service and delivery
- Strategies for the delivery of "targeted" CPD (e.g. chronic disease management, self management, e-health)
- Dynamics of evolving CPD formats (factors influencing change in physician behaviour, physician readiness, generational differences, etc)

Directions for New Research

Directions for new areas of research, based on the findings of this report might include:

- A comparative study of rural and urban CPD needs in order to identify similarities and differences between the needs of the two groups. Efforts in this direction may help CPD providers to identify areas of overlap between the two groups. This knowledge may facilitate co-learning and streamline the consumption of resources allocated towards CPD of BC physicians.

- An examination of the differences among VCHA physicians CPD needs based on demographic grouping. VCHA physicians are not a homogenous group, but may have divergent perspectives based on factors such as age, years in practice, practice location and demographic, cultural background and specialty. Further examination of these demographic variables may provide information which contributes towards the development of CPD that is maximally responsive to the needs of various physician groups.
- A longitudinal analysis of the impact this report has on subsequent CPD design and delivery including ongoing evaluation of educational initiatives within the VCHA.
- An examination of organizational strategies to facilitate local CPD.

Next Steps

Immediate next steps for this project include the dissemination of research findings to relevant audiences both within the VCHA and on a provincial level. In order to maximize the potential impact of findings, the results from this study should ideally be distributed to a broad audience including health authorities, CPD program planners and health care practitioners. Furthermore, the results of this needs assessment may allow stakeholders in VCHA physician CPD to further align their efforts and engage in productive partnerships centered around common goals. The ultimate aim of an initiative such as this one is not only to inform, but also to provide CPD stakeholders with concrete strategies to move forward with the design and development of CPD that will ultimately impact the health outcomes of all British Columbians.

APPENDIX 1 – SURVEY PROTOCOL

**VANCOUVER COASTAL HEALTH AUTHORITY PHYSICIANS'
CONTINUING MEDICAL EDUCATION/
CONTINUING PROFESSIONAL DEVELOPMENT (CME/CPD)
NEEDS ASSESSMENT
2006**

**FOR
GENERAL PRACTITIONERS / FAMILY PHYSICIANS &
SPECIALISTS**

We gratefully acknowledge the financial and logistical support of the:

Vancouver Coastal Health Authority
BC Medical Association

We recognize the survey is lengthy. Please complete ALL sections that might apply to your medical practice circumstances. Your input is valued and will inform future directions to better support you.

Why CPD, not CME?

Introducing Continuing Professional Development

Traditionally the term "CME" has been used to describe ongoing medical education. Many organizations, however, are moving toward the term "Continuing Professional Development" (CPD). CPD encompasses a broader range of relevant areas such as practice management, ethics, communication skills, teaching skills, and medical administration, in addition to clinical skills and evidence-based care. The term CPD also supports a wider variety of learning formats, such as small groups and self-directed learning.

Urban Focus

By design, some of the content in this survey has a strong urban point of view. This is because this survey follows a previous CME/CPD needs assessment of rural physicians which was designed to ascertain their unique perspectives. It is our hope that gaining an urban perspective in the present needs assessment will complement the existing data and allow for the development of CPD which better targets the needs of these two demographics.

I. Demographics

We would like to know a little bit about you. All responses will be kept confidential.

1. Since completing your training, how many years have you been in practice? _____

2. What is your sex?

Female

Male

3. Which of the following apply to your current status? Please check **ALL** that apply.
I am...

- In full-time medical practice
 In part-time medical practice
 A locum

4. Are you a specialist or a GP/FP? **Specialist** In what area are you a specialist?
_____ **GP/FP**

5. For the purpose of exploring the relationship between your educational needs and location of practice, please indicate your office postal code

II. Practice Setting: Where Do You Work?

1. Please indicate which setting(s) best describe where you work. Please check **ALL** that apply.

- | | | | | | | | |
|--------------------------|--------------------------|---|--|----------------------------|--------------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sessional
Clinic | Walk-In
Clinic | Private
Practice in
Office/Clinic | Family
Practice in
Office/Clinic | Long-Term
Care Facility | Emergency
Department | In-patient
care | Hospital
Out-patient
care |

If none of the above, please describe where you work: _____

2. What is the approximate size of the community/population in which you are situated? Please check **ONLY ONE**.

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
| Under 10,000 | 10,001- 49,999 | 50,000-99,999 | 100,000-499-999 | Over 500,000 |

3. Recognizing that physicians engage in significant independent/ "informal" learning, please approximate how many **hours** of formal, **structured** CPD activities you participate, **in a typical year**? For example, attending a conference or taking an accredited workshop. _____ hours

III. Learning Technologies

1. In your opinion...

- ◆ Are the technologies listed below readily available?
- ◆ Do you use them?
- ◆ Would you like more training in using each technology?

Type of Technology	Readily Available?		Do You Use?		Would you like more TRAINING in...	
	Yes	No	Yes	No	Yes	No
Computer:						
A computer to look up information during or between visits	<input type="checkbox"/>	<input type="checkbox"/>				
A computer within your exam room	<input type="checkbox"/>	<input type="checkbox"/>				
Internet:						
Highspeed Internet in your office to access CME/CPD, clinical information, etc.	<input type="checkbox"/>	<input type="checkbox"/>				
Highspeed Internet in your home to access CME/CPD, clinical information, etc.	<input type="checkbox"/>	<input type="checkbox"/>				

Type of Technology	Do You Use?		Would you like more TRAINING in			
	Yes	No	Yes	No		
Internet:						
A clinical resource program to access medical information (i.e. UpToDate or MDconsult)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
The Internet to:						
a) look up clinical practice guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
b) look up pharmaceutical information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
c) read online journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
d) access clinical update summaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hand Held Technologies:	Yes	No	Yes	No		
A PDA (Personal Digital Assistant such as a Palm Pilot or similar Handheld or Blackberry):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
a) to look up clinical practice guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
b) to look up pharmaceutical information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
c) to look up clinical information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
d) to access CME/CPD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Type of Technology	Readily Available?		Do You Use?		Would you like more TRAINING in...	
Technologies for eHealth⁵ / e-Learning:	Yes	No	Yes	No	Yes	No
Electronic medical record (EMR) (implementation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EMR (advanced use) -achieving efficiencies or audits to improve outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient Chronic disease management (CDM) data (i.e. CDM flow sheets, the 'Toolkit')	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

⁵ The use of computer technology as a significant and direct means of: providing health care, accessing information and learning – CPD/CME

Videoconferencing –(using Health Authority or University-based facilities)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type of Technology	Readily Available?		Do You Use?		Would you like more TRAINING in...	
Technologies for eHealth⁶ / e-Learning:	Yes	No	Yes	No	Yes	No
Videoconferencing- (using computer-based facilities)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provincial resources(e.g., BC Nurse Line, BC Health Guide Online, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office website (e.g. with recommended links for your patients)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interactive online CPD sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Is there anything else you would like to share pertaining to the availability, use or integration of eHealth technologies into your practice?

3. What are your **top three learning need areas pertaining to learning technologies?** For each area, please identify at least one topic you would like to learn about. Topics may include knowledge, skills or procedures.

	Learning Need Area:	Topic You Would Like to Learn About:
Example:	Implementation of EMR	Choosing a system; using in the exam room with patients; etc.

⁶ The use of computer technology as a significant and direct means of: providing health care, accessing information and learning – CPD/CME

IV. Your CPD Needs and Preferences

This section offers you an opportunity to inform the design and delivery of future CPD programs.

CPD can be delivered in many different ways. We would like to know your opinion regarding a variety of CPD formats. Specifically, we would like to know:

- ◆ Whether you **currently participate** in each of the following CPD formats?
- ◆ What is your **level of preference** toward each format?

	Within the past 2 years, did you PARTICIPATE IN...		What is your LEVEL OF PREFERENCE toward this format?			
	Yes	No	Not Preferred	Slightly Preferred	Moderately Preferred	Highly Preferred
UBC-CME sponsored activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conferences (local or elsewhere)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation for Medical Practice Education's Practice Based Learning Programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other small group learning (as opposed to lecture)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community hospital programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-accredited pharmaceutical or industry sponsored promotional activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clinical traineeships (E.g. funded training in specific areas over a week or longer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital rounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consulting books and/or journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Journal clubs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-assessment activities (e.g. audit, personal learning project)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

V. Learning Preferences and Knowledge Translation

Traditional CME/CPD, although effective at communicating information and raising awareness of needs, has been challenged for its deficiencies in effecting long lasting practice change amongst physicians.

1. From the list below, **which interventions aimed at assisting in knowledge translation** (helping to promote practice change) **do you feel might be effective/ineffective for you?** Please select the top 3 that are most effective for you.

	Not effective	Moderately effective	Very effective	RANK TOP 3
Conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Small group workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Increased time at events for reflection on implementation plans after new learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Learning tools/strategies at CME/CPD events to help implement learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In office skills training (e.g. a teacher/ mentor/ consultant visiting your office)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coaching/facilitation from an outside consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Linkage to a community of practice (i.e. working with those who are engaged such as PUGs ⁷ or PBSGL ⁸ etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Modeling (opportunities to observe practices which possess the desired skill set)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Role Play	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Online Modules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. Are there other supports that might encourage more meaningful practice/behavioural change after a CPD event?

⁷ PUGs refers to Physician User Groups.

⁸ PBSGL refers to Problem Based Small Group Learning.

3. What are your **top three learning need areas**? For each area, please identify at least one topic you would like to learn about. Topics may include knowledge, skills or procedures.

	Learning Need Area:	Topic You Would Like to Learn About:
Example:	Emergency medicine	Management of overdoses / toxicological emergencies

4. When/where would you prefer to attend a CPD activity?

	Not Preferred	Slightly Preferred	Moderately Preferred	Highly Preferred
Weekday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Summer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
March/Spring Break	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekday Breakfast time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekday Lunch time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekday Evening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Half-day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multiple days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Out of town	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Do you have any other comments regarding **your CPD needs or learning preferences**?

VI. Chronic Disease Management

1 a) What percent of your patients are living with a chronic disease? _____ %

b) What percent of your workload is comprised of managing patients with chronic disease? _____ %

2 a) Does your practice currently have a system of identifying/recording patients with specific chronic diseases or other risks (e.g. congestive heart failure, diabetes etc.)?

Yes

No

b) **If YES**, which of the systems below do you currently use and intend to use?
Please check **ALL** that apply.

	Currently Use	Intend to Use
Colour-coded chart stickers	<input type="checkbox"/>	<input type="checkbox"/>
Bring Forward (B/F) system or calendar	<input type="checkbox"/>	<input type="checkbox"/>
Computer database (e.g. Chronic disease management registries etc.)	<input type="checkbox"/>	<input type="checkbox"/>
A written list	<input type="checkbox"/>	<input type="checkbox"/>
Provincial "Chronic Disease Management Toolkit"	<input type="checkbox"/>	<input type="checkbox"/>
Flow sheets	<input type="checkbox"/>	<input type="checkbox"/>

3. To what extent would you be interested in participating in a CPD activity on the following **potential** chronic disease management (CDM) content areas?

Potential CDM Content Areas:	Not Interested	Somewhat interested	Moderately Interested	Very Interested
Using clinical practice guidelines to enhance patient care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incorporating CDM tools into your practice (e.g. diabetes flow sheet etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dealing with patient non-adherence/non-compliance to recommended guidelines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using clinical practice audits to enhance care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrating group visits into practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specific CDM topics:				
Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Congestive Heart Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Specific CDM topics:	Not Interested	Somewhat interested	Moderately Interested	Very Interested
Hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kidney Disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asthma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chronic Lung diseases (COPD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression/ Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental Illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dementia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Addiction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chronic Pain (non malignant)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arthritis/osteoarthritis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIV/AIDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis B/C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Palliative Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Topic (please specify): _____ _____	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

4. What are your **top three learning need areas pertaining to Chronic Disease Management**? For each area, please identify at least one topic you would like to learn about. Topics may include knowledge, skills or procedures.

	Learning Need Area:	Topic You Would Like to Learn About:
Example:	Cancer Screening	Reminder systems; Priority areas, etc

VII. Primary Health Care Renewal

Education and training can support new primary health care initiatives and systems change. With this in mind, to what extent would you be interested in CPD programs to support better understanding or implementation of the following?

	Not Interested	Somewhat Interested	Moderately Interested	Very Interested
Using clinical guidelines in daily practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employing decision support systems - enabled by technology (e.g, PDA, EMR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training in clinical procedures (e.g endometrial biopsy, IUD insertions, casting, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementing disease prevention strategies in practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supporting patient self-management skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using IT tools to identify referral resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adopting Interdisciplinary care models	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilizing registries and chart audits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VIII. Multidisciplinary Care Teams

1a. Are you currently working as part of a Multidisciplinary Care team in your clinic setting?

Yes No

1b. Do you see patients with another health care provider (e.g., nurse, physiotherapist)?

Yes No

1 c. If YES and you only see patients in conjunction with the allied health care provider(s) to address a specific disease(s), please indicate which these are?

Health care professionals that I see patients with	Disease being treated/managed

2. What other health professionals are assisting you with clinical practice in, or external to, your office? If funding was not an issue, who would you like to be practicing with in the future?

	CURRENT		FUTURE	
	IN OFFICE:	EXTERNAL TO OFFICE:	IN OFFICE:	EXTERNAL TO OFFICE:
MOA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Other) GPs/FPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Other) Specialist MD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nurse (RN or LPN)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nurse Practitioner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occupational/Physical Therapist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dietician/Nutritionist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychologist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Worker/Counsellor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Massage Therapist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acupuncturist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Would you be interested in a CPD activity teaching any of these team building elements?

	Not interested	Somewhat interested	Very interested
Developing effective skills for leading teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding team based training and the roles of interprofessional team members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Defining clinical performance goals and creating measurable outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using clinical and administrative systems i.e. PDSA cycles ⁹ , 'run charts', other progress measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

⁹ Plan, Do, Study, Act change cycles

IX. Interprofessional Education

1. To what extent do you **currently participate** in interprofessional CPD activities (i.e. involving physicians, nurses, physical therapists, and social workers)?

Never **Rarely** **Sometimes** **Often**

2. To what extent would you be interested in **increasing your participation** in interprofessional educational activities?

Not Interested **Slightly Interested** **Moderately Interested** **Very Interested**

3. Using the space below, please list one or two **SPECIFIC factors that might increase or decrease** your participation in attending interprofessional CPD activities.

Factors that would INCREASE your participation in interprofessional CPD activities...	Factors that would DECREASE your participation in interprofessional CPD activities...

4. Do you have any comments regarding **interprofessional CPD education**?

X. Readiness for Change

1. The *rows* below represent changes to practice based medical systems while the *columns* represent your readiness to make the changes. Please select the option which best describes your situation.

	I am not aware of this	I'm thinking about taking this step but would like more education	I am currently making changes in this area	I am currently doing this and am working to maintain it	I don't have any plans to make this change
Using PDAs as a point of care information resource as a component of a regular patient visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using new CDM tools in practice (e.g) CDM flow sheets and 'Toolkit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creating and using patient registries for the management of chronic disease and prevention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using an electronic medical record.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementing 'same day' / 'Open Access' appointment scheduling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working in Multidisciplinary Teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementing a practice website	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please rank how strongly you perceive the following factors listed below as being barriers to changing aspects of your practice, such as **adoption of EMR** or **integration of multidisciplinary care teams**:

<u>Adoption of EMR</u>	Not a barrier	Mild barrier	Moderate barrier	Strong barrier
Inadequate funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Current Workload too heavy (too busy)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness of resources (tools, funding, support, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of self confidence to make it work and follow through	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of mentoring (e.g., outside consultant/ expert)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No network of colleagues engaged in similar changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reluctance of office associates to make changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Adoption of EMR</u>	Not a barrier	Mild barrier	Moderate barrier	Strong barrier
Lack of desire for change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negative previous experience with change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No time to attend related CPD training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Integration of multidisciplinary care teams</u>	Not a barrier	Mild barrier	Moderate barrier	Strong barrier
Inadequate funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Current Workload too heavy (too busy)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness of resources (tools, funding, support, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of self confidence to make it work and follow through	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of space (e.g., No space for additional team members)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of mentoring (e.g., outside consultant/ expert)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No network of colleagues engaged in similar changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reluctance of office associates to make changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of desire for change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negative previous experience with change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No time to attend related CPD training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

XI. Incentives to Your Participation

Your input in this section will help CPD providers design better programs for urban physicians and specialists.

1. Using the list below, please indicate the degree to which the following **incentives** may **increase your willingness** to participate in CPD activities.

	Not an Incentive	Slight Incentive	Moderate Incentive	Strong Incentive
Activity is approved for professional study credits (e.g., CFPC, RCPSC or AMA, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CPD is delivered in your community (or in close proximity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family activities included in CPD schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Not an Incentive	Slight Incentive	Moderate Incentive	Strong Incentive
Child care available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social activities included in CPD event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Familiarity with event or event organizers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Thinking back to past CPD events that you have participated in, what features attracted you to partake in those activities?

3. What continues to attract you?

4. Do you have additional comments on **incentives** to your participation in CPD?

XII. Barriers to Participation

This section seeks your perspective on a number of technological, financial, and logistical barriers to your participation in CPD activities.

- Using the list below, please indicate the extent to which each item poses a **barrier to your participation in CPD**:

	Never a barrier	Rarely a barrier	Sometimes a barrier	Very frequent barrier
Time:				
Practice too busy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protecting family time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timing of CPD programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of sufficient locum coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finance:				
Loss of income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of CPD Registration/Fees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of travel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technology:				
Lack of appropriate computer hardware/software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of Highspeed Internet access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of comfort with computer & programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of comfort with PDA (Personal Digital Assistant such as Palm Pilot or similar Handheld or Blackberry)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational Barriers:				
CPD not available locally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of timely notification about upcoming CPD events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness of resources to support the costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Do you have any other comments regarding **barriers to your participation in CPD**?

3. Do you have **suggested solutions** to overcome any of these barriers?

XIII. Organizational Roles in CPD

In your opinion, what role(s) should the following organizations play in CPD? Please check **ALL** that apply.

	Funding	Developing Content	Organizing & Delivering	Setting Standards	Publicizing
Professional Bodies:					
College(s) of Family Physicians (BCCFP, CFPC)	<input type="checkbox"/>				
Royal College of Physicians and Surgeons (RCPS)	<input type="checkbox"/>				
British Columbia Medical Association (BCMA)	<input type="checkbox"/>				
College of Physicians & Surgeons of BC	<input type="checkbox"/>				
	Funding	Developing Content	Organizing & Delivering	Setting Standards	Publicizing
Canadian Medical Association (CMA)	<input type="checkbox"/>				
Specialty organizations (e.g. Pediatric Society; Emergency Medicine, etc)	<input type="checkbox"/>				
Government Bodies:					
Health Authorities	<input type="checkbox"/>				
Academic Bodies:					
UBC CPD-KT (CME)	<input type="checkbox"/>				
UBC academic departments E.g. FP, Medicine, O&G, etc	<input type="checkbox"/>				
Corporate Bodies:					
Pharmaceutical companies	<input type="checkbox"/>				
Other for-profit companies	<input type="checkbox"/>				
Other:					
Hospital-organized CME (e.g., St. Paul's)	<input type="checkbox"/>				
Local CME Committee	<input type="checkbox"/>				

XIV. Financial and Other Resources for CPD for Physicians

1. Please indicate the extent to which you **agree or disagree** with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Physicians should be paid to participate in CPD activities.	<input type="checkbox"/>				
The administrative requirements for applying and receiving CPD funding are a barrier.	<input type="checkbox"/>				
Existing financial support programs are sufficient.	<input type="checkbox"/>				
An up-to-date centralized directory of physician CPD activities within BC is needed.	<input type="checkbox"/>				
There is a need for a CPD program that supports physicians returning to work after an extended leave of absence.	<input type="checkbox"/>				

2. Is there anything else you would like to share, including **new programs** you would like to see developed, regarding **financial resources available for CPD**?

3. Do you have other comments relating to the **provision, access to or delivery of CPD for physicians** *or any aspect of this survey*?

You're Done!
Thank you for completing the survey!!!

Your input will help inform CPD providers about the types of education and training you need. Your views toward barriers and incentives in particular will facilitate the development of strategies to improve your CPD experiences. We are committed to making improvements to CPD.

Would you like to receive a summary of the survey findings?

Yes

No

Would you like to be entered into a draw to win one of 5 prizes?

Yes

No

If you responded yes to either question, please provide us with your contact information according to your preferred method of correspondence. This information will not be associated with your responses.¹⁰

Name:

Email:

Phone/fax:

Mailing Address:

Preferred method of correspondence:

Phone

Fax

Email

¹⁰ This page will be separated from the rest of the survey in order to preserve anonymity.

APPENDIX 2 – FOCUS GROUP PROTOCOL

Vancouver Coastal Health Physicians' CPD/CME Needs Assessment

FOCUS GROUP PROTOCOL

The following protocol represents the questions and topic areas to be discussed in the focus groups. Because this protocol is for a semi-structured, open-ended process, additional follow-up questions may be added as a result of the direction of a particular focus group discussion. That is, this protocol is inclusive of all possible topics to be covered and is designed to be used in a responsive way in discussion with participants. Note that some questions are accompanied by possible follow-up questions or alternatives that may be used in the discussion.

Core Themes:

- *The role of technology*
- *Learning preferences*
- *Chronic disease management*
- *Primary Health Care renewal*
- *Multidisciplinary care teams*
- *Readiness for change*
- *Incentives/Barriers to participation*

INSTRUCTIONS/REMINDERS

- Encourage people to get food.
- Have people sign-in on a sheet of paper you collect at the end.
- Begin by welcoming everyone and thanking them for participating.
- Describe this needs assessment project.
- Provide a brief overview of any emergent results to date.
- Introduce the facilitators and ask participants to introduce themselves. As this occurs, be sure to make a drawing with everyone's name so that you can later prompt people by name.
- Make sure to ask for a show of hands on important issues.
- Remember to ask each participant to provide (brief) information on their professional background.
- Distribute surveys to any participants who have not filled it out and leave copies for other physicians in their community.

- Remind participants to fill out and hand in their honorarium form.

FOCUS GROUP QUESTIONS

As Participants Introduce Themselves...

1. Where do you practice? How many years have you been practicing? Does your practice have a particular focus or cater to the needs of a certain community (e.g., Addictions, CDM)?

Core Focus Group Questions

2. What would you like to see come out of the findings (what kinds of change in particular)?

Prompts

- *How can CPD attend to challenges in your practice? (personal satisfaction and quality of care)*
 - *Where are you now and where do you see yourself in 5 years, and how can CPD help you to get there?*
3. What are the most important learning needs you have right now? Clinical? Other? *[probe into behavioural and practice communication]*
 4. a) The landscape of the clinician is changing and modern physicians use more sophisticated technologies and function in increasingly diverse environments. Are there any CPD needs specific to the modern physician which you feel need to be addressed? (in the context of the new BCMA agreement)

survey data→ b) In terms of technology-related CPD, what steps do CPD providers need to take to ensure that physicians are having success in their attempts to adopt new technologies and integrate them into their practice?

Prompts: (some ideas which have been discussed include)

- *Develop varied programming that speaks to the needs of the entire continuum of technology users from beginners to enthusiasts.*
 - *Offer 'hands on' CPD opportunities to small groups of learners.*
5. What are some of the factors you look for in a learning experience or process? Feel free to use some of the recent CPD activities and programs you participated as examples.
Prompts:
 - *What are your experiences with and views on interprofessional CPD activities?*
 - *What is your experience with and views on technology as a way to deliver CPD? Technology as a means of providing decision support (e.g., during visits with patients)?*
 - *Does CPD play a role in helping you to meet goals related to primary care reform?*

6. **survey data**→ In your experience, what are the most significant barriers affecting your participation in CPD? What strategies would you suggest to reduce these barriers?
7. What are some practical incentives that would increase participation in CPD?
8. There is a large body of literature which demonstrates that traditional CME (conferences) is an effective way to communicate information, but falls short when it comes to enabling physicians/learners to make **long term** changes in their practice. What strategies do you see as being effective in making the information gained at CPD events “sticky”?
Prompt:
 - *E.g., the literature suggests that the following might be effective: small group workshops, in office skills training, time for reflection post activity, commitment to change activities, modeling opportunities. What are your thoughts?*
9. **Survey data**→What would encourage you to work collaboratively with others and how could CPD support this? What would encourage you to work with the EMR and how could CPD support that?
10. Now that we have had this discussion, how do you see CPD meeting your needs?
11. Is there anything else you would like to raise/mention regarding CPD and your educational needs that we did not have a chance to discuss?

THANK YOU!