UBC Faculty of Medicine
Long-Term Outcomes Evaluation Report

UBC's Contribution to Physician Supply in the Province
2012-13

Report

Training and practice outcomes of undergraduate and postgraduate UBC FoM trainees 2000 to 2012

Updated October 4, 2013 - Produced by the Evaluation Studies Unit

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About

The University of British Columbia Faculty of Medicine (FoM) Long-term Outcomes Report is an annual report produced by the Evaluation Studies Unit (ESU) detailing the contribution of UBC FoM's distributed medical education programs to BC's physician workforce.

Intended audience

This executive summary is intended for key decision makers in UBC FoM's medical education programs and for program staff that support those decision makers.

Suggested citation

Evaluation Studies Unit. Long-Term Outcomes Evaluation Executive Summary 2012-13, UBC's Contribution to Physician Supply in the Province. Vancouver, BC: University of British Columbia Faculty of Medicine; 2013.

Further information

For questions and to access the full report and appendix, please contact David Snadden, Executive Associate Dean, Education, UBC Faculty of Medicine. David.Snadden@ubc.ca.

Executive Summary

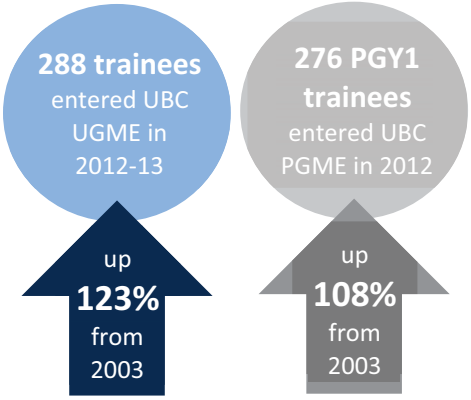
As the primary provider of trained physicians to BC, the University of British Columbia (UBC) Faculty of Medicine (FoM) has a mandate to respond to the province's physician supply needs, including the need for improved geographic distribution and for better access to health services in rural, remote and northern communities. Since 2004, with support from the Provincial Government, UBC has expanded and distributed its undergraduate (UGME) and postgraduate medical education (PGME) programs across the province to address these needs.

This executive summary presents early findings on the impact of the medical education program expansion (in size) and distribution (geographical) on physician distribution and retention in BC. Where possible, pre-expansion data (2003) and post-expansion data (from 2004 onwards) were compared.

Key Findings

Trainee numbers and projected physician numbers have increased post-expansion.

- **Trainee increases:** There was a 123% increase in the number of undergraduate trainees entering UBC FoM in 2012 compared to 2003 (pre-expansion (from 129 to 288)). Over the same period, there was a 108% increase in postgraduate trainees (PGY1, from 133 to 276)) entering UBC. As clinical residents in training provide health services, this increase represents enhanced service capacity in BC.



- **Physician increases:** These increases in trainee numbers have translated into increases in the absolute number of independently practicing physicians produced by UBC FoM's medical education programs (UGME and PGME) across all specialty types, and numbers will continue to increase as more post-expansion graduates complete training.

Training physicians takes time.

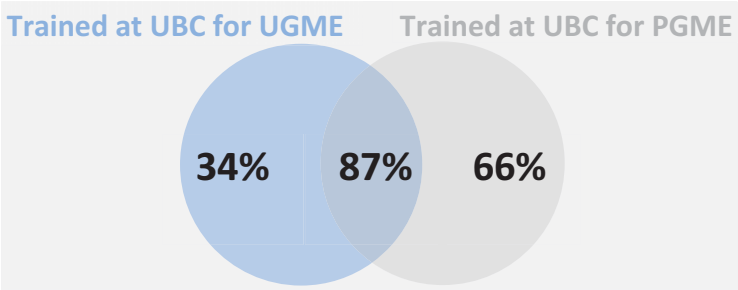
- **Current practice status:** UGME takes four years, while PGME residency training can take anywhere between two and seven years. As a result, a number of the cohort included in this evaluation is still in training. Approximately one quarter of UGME entrants (25%) and two-thirds of PGME entrants (65%) from 2000 to 2012 have completed training and are licensed to practice medicine independently. In cohorts that are more recent these proportions are smaller, as greater numbers of entrants are still in training.

Increases are occurring in the numbers of doctors staying in BC for training and practice.

- **Training in BC**: Increases occurred in the absolute numbers of UBC UGME trainees entering UBC for postgraduate training (from 71 of the 2003 entrants to 109 of the 2008 entrants (later entrants have not yet completed training)). Of those graduates who entered UBC UGME following expansion (n = 1159), approximately 49% went on to residency training in UBC PGME programs.

- **Practicing in BC:** Almost three quarters (74%) of currently practicing physicians who entered UBC PGME training between 2000 and 2012 have remained in BC (and 66% of UBC UGME trainees). 87% (350/402) of those currently practicing physicians with combined status[1] have remained in BC. 34% (94/274) of those who only trained in UGME at UBC and 66% (835/1271) who trained in UBC PGME during the time period are now practicing in BC. Since expansion and distribution, a trend has begun to appear toward an increase in the absolute numbers of physicians remaining in the province to practice.

What proportion of UBC 2000 to 2012 entrants are now practicing in BC?



- **Practicing in BC Health authorities:** It is likely that expansion will result in increased numbers of UBC-produced physicians practicing in health authorities across the province. For example, even though 57% of UBC PGME entrants from 2010 are still in training, 12 physicians from that cohort are already practicing in the Northern Health Authority (NHA), compared with only 4 from 2003 (a year in which 100% of trainees are now practicing).
- **Family practitioners in BC:** 63% of post-UGME expansion *family practitioners* that are currently practicing are located in BC. This proportion is very similar to the proportion staying in BC prior to expansion, although this number may change once more trainees enter practice.

Increases are projected in numbers of primary care doctors produced by UBC FoM.

- **Training specialty choice of those leaving UBC undergrad:** A large increase has occurred in the numbers graduating from UBC UGME into all PGME training programs anywhere in Canada. From the last year pre-expansion (2003) to the most recent year of entrants that have graduated (2008) there has been a 107% increase in those entering family practice (42 to 87), a 91% increase in those entering generalist specialties (34 to 65) and a 62% increase in those entering other specialties (47 to 76).
- **Training specialty choice of those entering UBC postgrad:** Increases have also occurred in the numbers entering all UBC PGME specialty programs from UBC and elsewhere. From 2003 to the most recent year of entrants (2012) there has been a 135% increase in those entering family practice, a 182% increase in those entering generalist specialties and a 43% increase in trainees entering other specialties. More than 60% are training in specialties that address specific primary care shortages in BC (family practice, internal medicine, pediatrics and psychiatry), a number that will likely translate into practice.

[1] Trainees with combined status are those who entered UBC UGME and went on to UBC PGME between 2000 and 2012.

Increases are projected in the number of doctors practicing in rural areas.

- **Rural practice:** Approximately 8% of UBC PGME trained physicians based in Canada are practicing in rural areas (based on the Canada-wide Rural Small Town (RST) definition[2]). Depending on the definition used, between 8% (RST) and 18% (Rural Subsidiary Agreement (RSA) definition) of UBC PGME trained physicians in BC are practicing in rural communities. Due to the significant increases in the numbers entering the program it is anticipated that more trainees will end up practicing in rural areas, even if the proportion remains the same (depending on external factors including job availability, funding, etc.).
- **Rurality by specialty:** As expected, more family physicians practice in rural areas than generalist or specialty physicians, as they do not require resources that are available in the tertiary care hospitals commonly located in urban centers. 22% (28/127) of BC-based family practice physicians who attended UBC UGME after expansion are located in rural (RSA) areas (7% RST).

UBC FoM is seeking to increase the diversity of entrants.

- **Entry profile:** 63 aboriginal entrants were admitted to UGME since 2004, increasing from 5 entrants in 2003 to 12 in 2012. A greater proportion of female entrants than males was admitted to both UGME and PGME (PGME female entrants increased from 48% to 61% over the period from 2000 to 2012). The majority (90%) of PGME entrants from 2000 to 2012 completed their MD training in Canada, and more than a third (38%) in BC. It is anticipated that the admissions profile of students and residents entering UBC may affect their practice interests upon completion of training.

Opportunities to train in communities across BC may affect trainees' practice decisions.

- **Training specialty choice:** Half (50%, 66/132) of those who trained at the Northern Medical Program (NMP) following distribution chose to train in ***family practice*** for residency, compared with 40% from the Island Medical Program (IMP; 55/136) and 31% from Vancouver Fraser Medical Program (VFMP; 276/891), suggesting that training at a distributed site may have an impact on eventual practice specialty choice.
- **Retention in training location:** Of those practicing in BC to date, a substantial proportion of those studying at the NMP stayed in the Northern Health Authority (NHA) upon completion of training (71%), and more than a third (38%) of those training in the IMP stayed in the Vancouver Island Health Authority (VIHA). There may be an association between training location and eventual practice location. Very preliminary findings show that for the UGME entrants from 2004 to 2012 who are currently practicing family practice in BC, 16% (20/127) are currently located in the NHA, compared with only 6% (2/33) who entered in 2003. Although these numbers are small and should be reviewed with caution, they highlight a promising trend.
- **Practice in rural areas:** A greater proportion of NMP trainees are now practicing in rural areas across Canada (33%, RST, 10/30), compared with IMP (3%, 1/30) or VFMP (6%, 9/160). However, the numbers are small and should be reviewed with caution, as many of the cohort are still in training.

Discussion

The data presented in this summary reveal the early positive trends that are occurring following the expansion and distribution of UBC FoM's medical education programs. These gains include increased numbers of physicians who will work in primary care (family practice and generalists), as well as increased numbers practicing in areas of need.

The measurement of the impacts of expansion and distribution is complex and will evolve over time as more post-expansion trainees complete training and begin to enter practice, and a more accurate picture of the contribution of UBC FoM to the province can be developed. UBC FoM's medical education programs will not reach a steady state of intake positions until approximately 2014, and so the full impact of expansion will not be known for several years.

[2] For more information on the rural definitions, please contact the Evaluation Studies Unit.

User's Guide

What is the purpose of this report?

The University of British Columbia Faculty of Medicine (FoM) Long-term Outcomes evaluation report presents early training and practice data on the outcomes of the expansion and distribution of UBC undergraduate and postgraduate medical education programs, initiated in 2004. The aim is to provide information on progress toward expansion goals to assist in physician human resource planning.

Who is this report for?

This report is an annual report intended for key decision makers in UBC FoM's medical education programs and for program staff that support those decision makers, for example, communications staff, project managers and program evaluation staff.

How does this report fit in with other products?

This report was developed as a comprehensive foundational document from which data will be used to generate other, more targeted products. This report is accompanied by an executive summary of key findings (intended as a quick reference guide), and appendices containing detailed numbers for reported outcomes.

Data incorporated here are used in complementary FoM projects, including the UBC FoM Integrated Planning Document (A Strategic Plan for Medical Education in British Columbia, 2013-2020) and the UBC FoM Strategic Plan (2011-2016). Data from this report may be used in summary reports to supplement data from other evaluations and projects, as requested by senior leadership.

What is included in this report?

Data are presented on the current status, location, and specialty type of individuals who have entered training at UBC FoM between 2000 and 2012. Individuals who entered UBC prior to expansion (2000 to 2003) and after expansion (2004 onwards) have been referenced and compared.

What is not included in this report?

This report does not provide information on the total contribution of UBC to physician resources in BC over time, as extrapolation from this limited cohort would grossly underestimate UBC's contribution to health human resources.

How to navigate this report?

This report is divided into two chapters: (i) undergraduate outcomes, and (ii) postgraduate outcomes. The (separate) executive summary document brings these findings together.

Who is the key contact for this report?

This report was produced by the Evaluation Studies Unit, University of British Columbia FoM. For further information, please contact David Snadden, Executive Associate Dean, Education, UBC FoM. David.Snadden@ubc.ca.

Suggested citation

Evaluation Studies Unit. Long-Term Outcomes Evaluation Report 2012-13, Physician Contribution to the Province. Vancouver, BC: University of British Columbia Faculty of Medicine; 2013.

Introduction

Background

The province of British Columbia (BC) faces a physician supply and distribution problem, particularly in underserved areas (e.g. rural, remote, and northern communities). As the primary provider of trained physicians to BC, the UBC Faculty of Medicine (FoM) has a social responsibility and accountability mandate to meet the needs of communities across the province.

In 2004, with support from the provincial government, UBC FoM implemented the first fully distributed medical education program in North America by expanding and distributing its undergraduate (UGME) and postgraduate (PGME) medical education programs across the province.

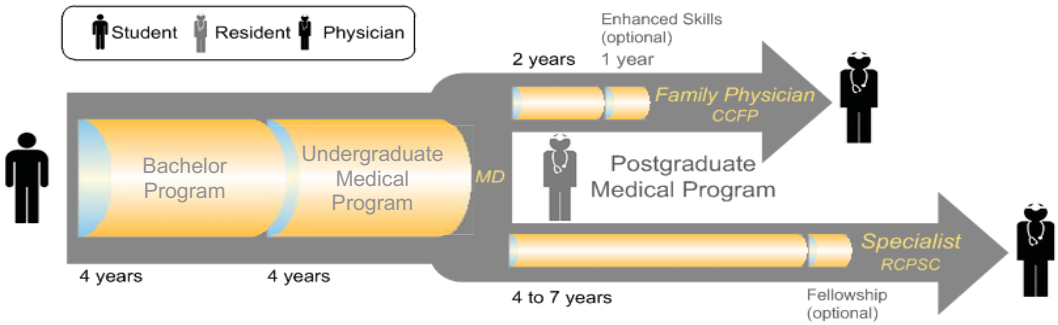
Medical Training Trajectory

UBC UGME is a four year program, and graduates receive an MD degree upon completion. After UGME, MD graduates from BC and other institutions may enter PGME at UBC or elsewhere. PGME provides clinical experience and education for MD graduates (residents) in specific areas of medicine and is a mandatory step toward national certification and full licensure in order to practice medicine independently.

For residents, the length of PGME training can range from two to seven years depending on the requirements of their training program. At UBC, PGME comprises a family practice training program recognized by the College of Family Physicians of Canada (CFPC), and more than 60 specialty and subspecialty training programs recognized by the Royal College of Physicians and Surgeons of Canada (RCPSC).

Upon completion of PGME, physicians may enter optional clinical fellowship programs to obtain further training in a specific area of expertise, or may choose to enter independent practice. Postgraduate trainees (i.e. residents and clinical fellows) have a dual responsibility as a healthcare provider and as a medical trainee; they actively contribute to health service delivery during their PGME training (Figure 1).

Figure 1: Medical training trajectory



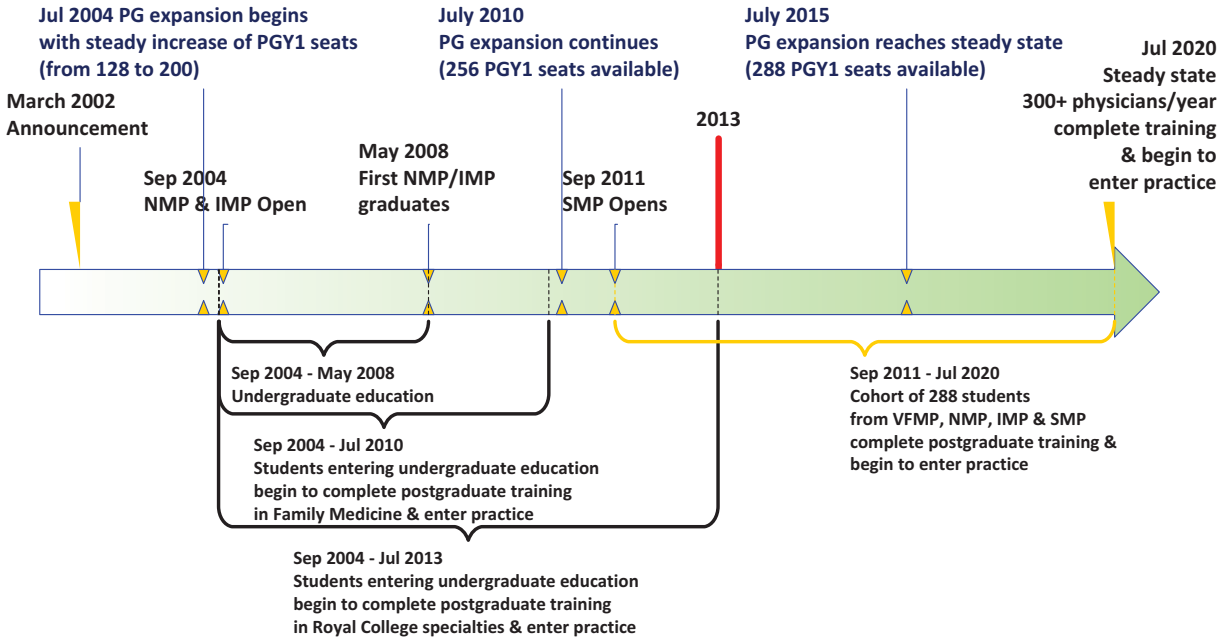
Expansion and Distribution of UBC FoM

The goal of **expansion** is to train a larger number of physicians. To meet this goal, UBC began to increase the intake of medical trainees in both UGME and PGME programs in 2004. In the undergraduate program, admissions increased from 128 in 2003 to 288 in 2011. To support this growth, an equal number of first year (PGY1) residency training positions were created to match the number of students graduating from the expanded MD class size (Webber, Rungta & Sivertz, 2008), (Figure 2). Initial priority was given to PGY1 positions in family practice and Royal College generalist specialty programs (i.e. internal medicine, paediatrics, psychiatry, obstetrics and gynecology (OB/GYN) and general surgery) in order to increase the number of primary care and generalist specialty physicians in BC and to enhance primary health care delivery (Webber, Rungta & Sivertz, 2008).

The goal of **distributing** medical education throughout the province is to prepare future doctors for the challenges and benefits of medical practice in a variety of communities, including rural, remote, northern and other underserved communities, and to encourage medical trainees to consider practicing in these communities upon completion of training.

UBC's UGME is delivered across four geographically distinct program sites: Island Medical Program (IMP) in Victoria, Northern Medical Program (NMP) in Prince George, Vancouver Fraser Medical Program (VFMP) in Vancouver, and the Southern Medical Program (SMP) in Kelowna, and training also takes place in numerous smaller communities. An optimal clinical training environment requires the presence of learners with varying competency levels and the Liaison Committee on Medical Education (LCME) UGME accreditation requires that "medical students learn in clinical environments where graduate and continuing medical education programs are present" (IS-12A). Therefore distribution of UBC PGME also occurred, to support undergraduate education in new training sites across the province. PGME training programs are delivered in hospital and community-based health care facilities (including various family practice residency training sites distributed throughout BC, in communities such as Nanaimo, Prince George, Chilliwack and Terrace).

Figure 2: UBC FoM expansion and distribution timeline



Evaluating Long-term Outcomes

To demonstrate the extent to which UBC FoM is achieving its social responsibility and accountability goals, the Evaluation Studies Unit (ESU) is monitoring the outcomes of the UGME and PGME expansion and distribution related to residency training choices, specialty choice, and location of practice upon completion of medical training. Ongoing monitoring will demonstrate the impact of UBC FoM on physician distribution and retention within BC.

It is important to recognize that the impact of the distribution and expansion strategy will take time to realize due to the long and complex nature of the medical training trajectory.

Purpose

The purpose of this evaluation report is to present early data on the outcomes of UBC FoM expansion and distribution. The aim is to provide information to decision makers on the progress made towards the expansion and distribution goals in order to assist in physician human resource planning.

The evaluation was designed to provide evidence to address the following evaluation questions:

UBC FoM Overall Contribution Program Outcomes	**Profile**
	• How many trainees entered UBC FoM between 2000 and 2012? (UG, PG)
	• What are the characteristics of trainees who entered UBC UGME or PGME training between 2000 and 2012? (e.g. sex, age, aboriginal status)
	• Where did UBC PGME trainees complete their MD undergraduate training?
	• What is the current status of trainees who entered UBC FoM between 2000 and 2012 (i.e. in training, in practice, other)? (UG, PG)
	Expansion: What is the impact of UBC FoM expansion on…
	• Numbers entering UBC UGME?
	• Numbers of PGME trainees?
	• Numbers of UBC FoM trained physicians? (UG, PG)
	• Specialty choice? (UG – training, UG – practice, PG –practice)
	• Practice location? (UG, PG)
	Distribution: What is the impact of the UBC FoM distributed program on…
	• Specialty choice? (UG – training, UG – practice)
	• Practice location?
	  ○ Within BC versus outside BC? (UG)
	  ○ Distribution by BC health authorities? (UG)
	  ○ Rural versus urban practice? (UG)

Approach

Descriptive approaches were used to present data on UBC FoM trainees' practice specialty types and locations.

Inclusions: This report includes individuals who entered UBC FoM between 2000 and 2012 as undergraduate trainees or postgraduate residents. Postgraduate trainees funded by provincial sources (e.g. BC Ministry of Health, BC Ministry of Advanced Education) who entered UBC FoM at any level (e.g. first or third year (PGY1/PGY3)) are included.

Exclusions: This report excludes all postgraduate trainees who trained at UBC for less than one year. Also excluded are clinical fellows (n = 1451) and residents funded by non-provincial sources (n = 238, e.g. federal government, Canadian businesses or foreign countries (e.g. Visa residents); Appendix A-1), because they have contractual obligations to return service to their sponsoring organization or country, and thus cannot be relied upon for BC physician workforce planning. However, it should be noted that excluded trainees contribute to medical education and provide valuable health care services to British Columbians during their postgraduate training.

Data Sources

UBC FoM 00-12 trainees' demographic, training and practice information were extracted from the FoM medical education database developed and maintained by the ESU. This database links data from various internal and external sources (for a complete table see Appendix A-2).

Analyses

The majority of this report uses descriptive analyses (e.g. frequencies). For further information on our methods, please request a copy of the ESU's methodology document.

Definitions

Throughout this report multiple definitions are used for rurality and practice type. For example, there are two definitions of rural (RST, a definition applicable across Canada, and RSA, a definition applicable to BC alone), and two definitions of generalist. These definitions are described in detail in Appendix A (Tables A-3 to A-5).

Findings

Part 1: UBC FoM Undergraduate Program

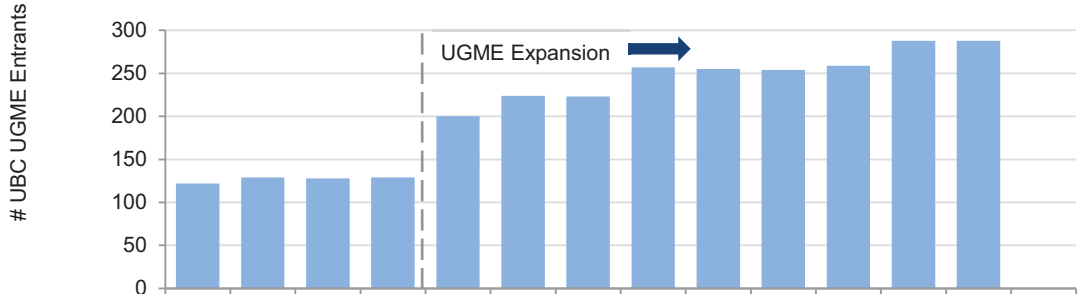
Undergraduate training profile: What are the characteristics of UBC trainees?

The following section details the characteristics of UBC FoM trainees who entered UGME training between 2000 and 2012.

Number of Trainees Entering UBC UGME from 2000-2012

During the period 2000 to 2012, a total of 2756 trainees entered UBC UG. There were 129 UGME entry positions in the year prior to expansion, compared with 288 in 2012-13 (Figure 3, Table B-1).

Figure 3: Number of trainees entering UBC UGME pre- and post-expansion (N = 2756)

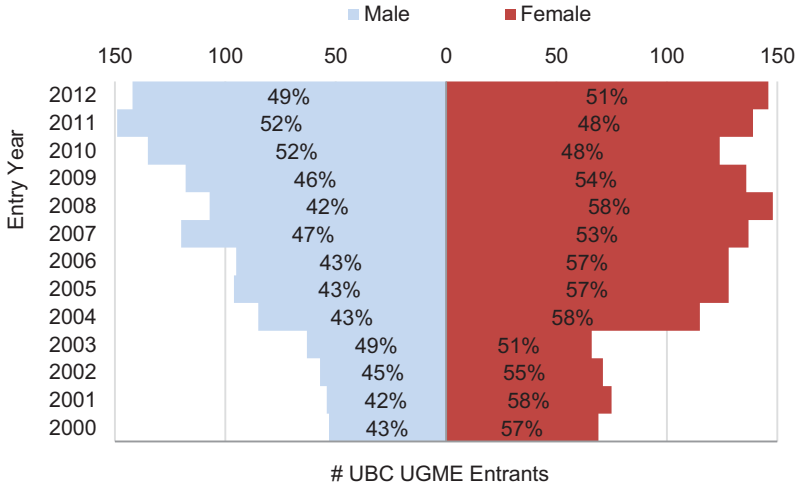


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
UBC UG Trainees	122	129	128	129	200	224	223	257	255	254	259	288	288	2756

Sex distribution by UGME entry year

The overall distribution of males and females entering UBC UGME was 46% to 54%, respectively, between 2000 and 2012 (Figure 4); this higher level of female representation was similar to national trends[3].

Figure 4: Sex distribution of UBC UGME entrants by entry year (N=2756)



Age at PGME entry

The average age of trainees at time of entry to UBC UGME was 24 years.

Aboriginal status of UGME trainees

As part of its social responsibility and accountability mandate, UBC aims to increase the numbers of aboriginal students admitted to UBC FoM. According to admissions data, a total of 74 aboriginal

[3] http://www.caper.ca/~assets/pdf_Specialties_Overview_All_Specialties_2011.pdf; http://www.cihi.ca/cihi-ext-portal/internet/en/document/spending+and+health+workforce/workforce/other+providers/hpdb_phsic

students were admitted to UBC UGME in the period (2000-2012), with 12 (4% of all students) admitted in 2012 (Table B-3).

In the UBC undergraduate student profile survey[4], 13 students entering in 2012 identified as Aboriginal. It is possible that not all students declare their Aboriginal status on their admissions application, suggesting that numbers may be underestimated.

Figure 5: Number of aboriginal entrants to UBC UGME

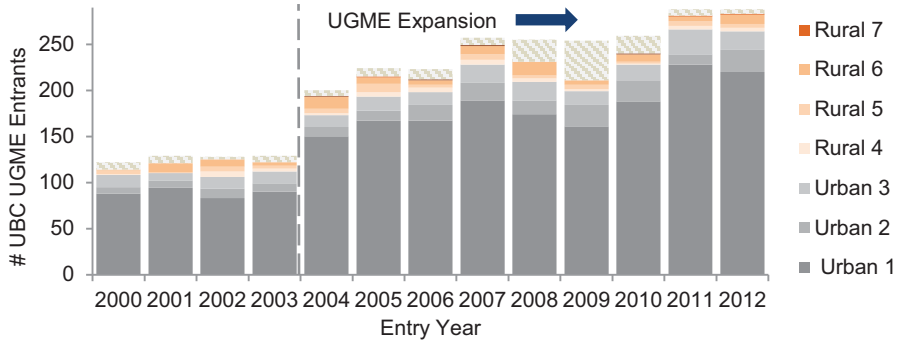
Rural background of UGME trainees

Research suggests that physicians with a rural background are more likely to end up practicing in rural locations[5]. Here, high school location is used as a proxy to identify the proportion of students entering medical school with rural or urban backgrounds. It was anticipated that increasing rural admissions might result in increased numbers of graduates choosing to practice in rural areas (Figure 6).

In 2012, 7% (19/288) of students entering UBC undergrad had completed high school in a rural area (RST) of Canada.

A total of 18 of those entrants were from rural areas in BC (RST). 87% (251/288) of 2012 entrants were from BC.

Figure 6: High school location of UBC UGME entrants by entry year (N= 2756)



These findings differ a little from findings from the backgrounds that students reported in the UBC undergraduate student profile survey[2] of UGME students entering in 2012-13, which indicated that 47% of students reported living most of their life in an urban area, 25% in a suburban area, 17% in a rural/remote area, and 11% in a mixture of environments, compared with a national study reporting 50% urban, 31% suburban, 19% rural/remote.

Current Practice Status of UBC UGME trainees

Of the 2756 individuals who entered UBC UGME between 2000 and 2012, 25% (676) are currently out of training and have a valid practice location (Table 2). Nearly three quarters ((n=2050 (74%)) were still in undergraduate or postgraduate training). A small number were lost to follow-up or not practicing (n=30 (1%)). Reasons why a physician may not have valid practice location information available include: transition from training to practice,

[4] UBC FoM Student Profile Report 2012-13

[5] https://secure.cihi.ca/free_products/hctenglish.pdf; Carter RG. "The relation between personal characteristics of physicians and practice location in Manitoba". Canadian Medical Association Journal. 1987; 136:559-63; Easterbrook M, Godwin M, Wilson R, Hodgetts G, Brown G, Pong R, Najgebauer E.(1999). Rural background and clinical rural rotations during medical training: Effect on practice location. *Canadian Medical Association Journal*, 160(8), 1159-63.

practice out of country, change of profession, loss of license or death, among others. For a more detailed breakdown, see Appendix B (Table B-4).

Because of the large number of 2000 to 2012 entrants still in training, all data relating to practice status presented in this report should be reviewed with caution.

Table 1: Description of UBC UGME trainees' status

UBC UGME Trainees		As of Spring 2013	
		n	%
In Training		2050	*74.4%*
Out of Training	In Practice	676	*24.5%*
	Lost to Follow-up	17	*0.6%*
	Not practicing	13	*0.5%*
Total UBC Trained		2756	*100%*

Undergraduate program outcomes: What is the impact of expansion?

This section provides an overview of the overall impact of the expansion of UBC undergraduate program to date, using data from those who entered UGME training between 2000 and 2012.

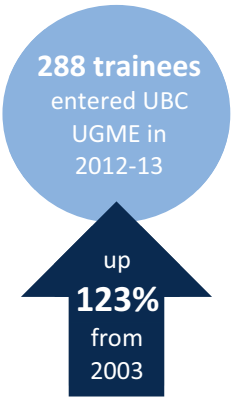
Training Outcomes

Impact of expansion on UGME training numbers

Since the expansion, there has been an 123% increase in the numbers of students entering UBC UGME from 129 entrants in 2003 to 288 entrants in 2012 (Figure 7).

In 2013, 248 students graduated, compared with 122 in 2007 (the last grads to have entered before expansion) (Appendix B-1). Numbers will continue to increase as the first cohort of SMP students is set to graduate in 2015.

Figure 7: Number of UBC UGME trainees entering in 2003 versus 2012



Retention of UBC undergrads for postgrad training

51% of all undergraduate trainees who entered UBC FoM between 2000 and 2008 went on to attend postgraduate training at UBC (entrants from 2009 to 2012 are still undertaking undergraduate training) (Appendix B-2).

Impact of expansion on PGME training specialty

The choice of PGY1 training specialty of those graduating from UBC UGME is outlined in Table 3 (Appendix C-1).

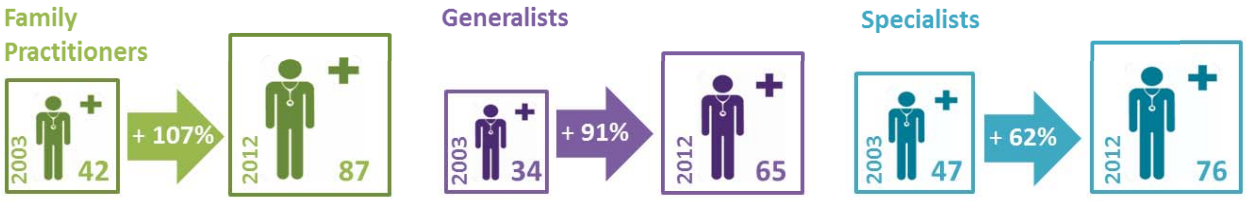
Table 2: PGY1 specialty choice of UGME trainees on graduation from UBC

PGY1 Specialty Choice	2003 UGME entry (Majority graduated in 2007)		2008 UGME entry (Majority graduated in 2012)		All years (2000-2008 Entry)	
	n	%	n	%	n	%
Family Practice	**42**	*34%*	**87**	*38%*	**581**	*36%*
Generalist Specialties	**34**	*28%*	**65**	*29%*	**416**	*26%*
Internal Medicine	**20**	*16%*	**36**	*16%*	**239**	*15%*
Pediatrics	**7**	*6%*	**12**	*5%*	**73**	*5%*
Psychiatry	**7**	*6%*	**17**	*7%*	**104**	*6%*
Other Specialties	**47**	*38%*	**76**	*33%*	**608**	*38%*
Total *(of those with known PGY1 specialty)*	**123**	*100%*	**228**	*100%*	**1605**	*100%*
Specialty Unknown/Not yet graduated	**6**		**27**		**62**	

Note: PGY1 specialty choice over-represents the number of students training in a generalist specialty as many trainees sub-specialize later in their training program.

Expansion resulted in large increases in the absolute numbers of trainees entering PGME across all specialty types (Table 3). The number of UBC UGME graduates choosing to enter PGME in *family practice* increased by 107% from 42 (entrants from 2003) to 87 (entrants from 2008), and numbers entering *specialist* training increased by 62% (47 to 76). There was a 91% increase (34 to 65) in the number of UBC graduates entering postgraduate training in a *BC MoH generalist* specialty.

Figure 8: PGY1 specialty choice of UGME trainees on graduation from UBC



Impact of expansion on PGME training location

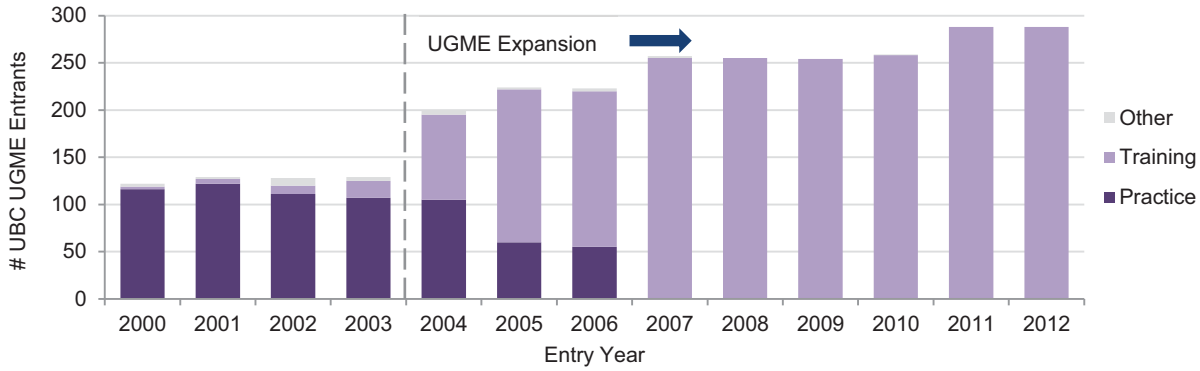
Of the 2000-2012 UBC UGME entrants who have begun postgraduate medical training, 51% have remained in BC for their training. A total of 43% (109/255) of 2008 UBC UGME entrants (graduating in 2012 or 13) remained in BC for their postgraduate medical training; this number may change as more 2008 entrants enter PG training. For a detailed breakdown of PGME training location by MD class, please refer to Appendix C (Table C-2).

Practice Outcomes

This section outlines the ***current practice status*** of UBC UGME graduates as of spring 2013. In 2013, the first 'specialist' graduates from the expanded undergraduate cohort (entered UBC UGME in 2004) will complete training and begin to enter independent practice, after 4 years of undergraduate and 5 years of postgraduate training.

Impact of expansion on numbers of UBC UGME-produced physicians

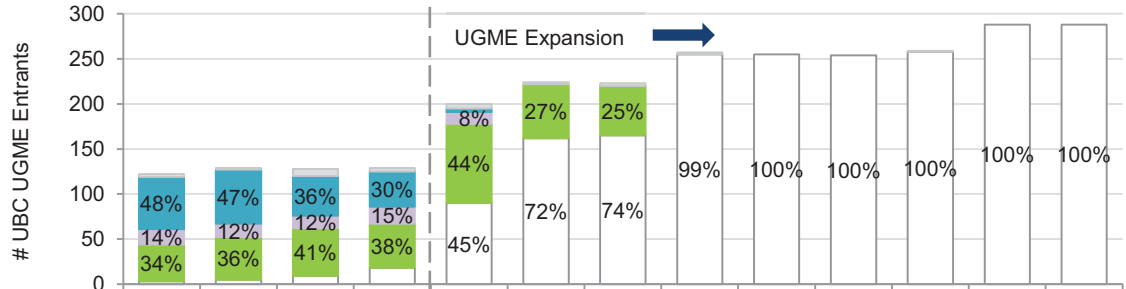
Figure 9: Current status of UBC UGME trainees by entry year (N = 2756)



Expansion has resulted in an increase in the absolute numbers of physicians set to be produced by UBC UGME. While the majority of UGME entrants from 2000 to 2003 have completed training and entered practice, the majority of post-expansion entrants are still in training. Of those who entered UBC UGME in 2003, 107 (83%) are practicing, independent physicians (which should increase to 129 as the remainder complete training). From the first year post-expansion (2004 entry, 2008 graduation), 105 doctors are already in practice and this will continue to increase over the next few years as the remainder enter practice (Figure 9 and Appendix B-4).

Impact of expansion on practice specialty

Figure 10: Current practice specialty of UBC UGME trainees by entry year (N = 2756)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Other	3	2	8	4	5	2	3	2	0	0	1	0	0
Specialist	58	60	44	39	4	0	0	0	0	0	0	0	0
Generalist	17	15	14	19	13	0	0	0	0	0	0	0	0
Family Medicine	41	47	53	49	88	60	55	0	0	0	0	0	0
Training	3	5	9	18	90	162	165	255	255	254	258	288	288

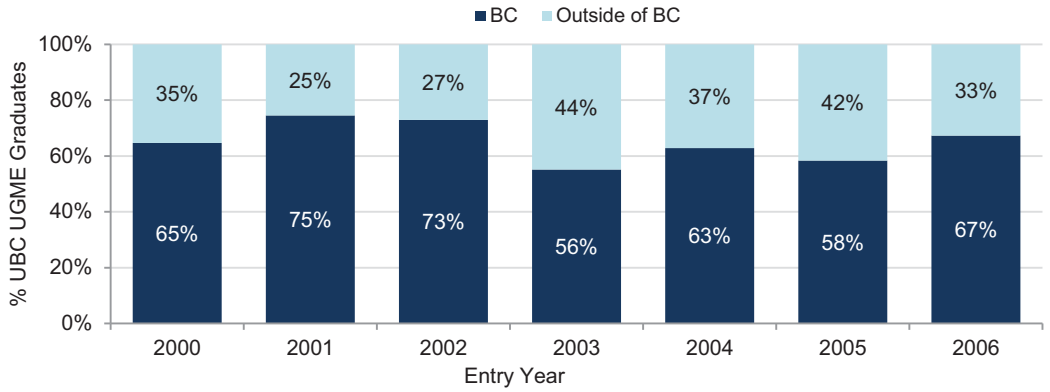
It is early to determine the impact of expansion on practice specialty for UBC UGME entrants. Some UBC UGME graduates from the early post-expansion years have begun to practice family medicine, but there will be a time lag before graduates complete the longer training programs associated with the other specialties and enter practice (Figure 10). Of all the 2000-2012 entrants who have completed training and are now in practice, 58% (393/676) are practicing family medicine, 12% (78/676) are practicing in a generalist specialty, and 30% (205/676) are practicing in other specialties (Figure 10, Appendix C-3).

Impact of expansion on practice location

It is early to report on the full impact of expansion on practice location for entrants to UBC UGME; however, absolute numbers of doctors across BC will increase over the next few years. Preliminary findings on the impact of

distribution on practice location are outlined in the next section of this report. Here we provide an overview of the practice location of all physicians who entered UBC UMGE between 2000 and 2012, and are now practicing as independent physicians.

Figure 11: Proportion of UBC UGME trainees practicing in BC by entry year (N = 676)



Of those currently practicing physicians who entered UBC UGME between 2000 and 2012 (676):

- 97% are in Canada (654/676)
    - Of which 8% (52) are located in rural areas (RST).
- Two-thirds (66%, 444/676) remained in BC (Figure 11). This number is comparable to the numbers (over 60%) that remained in the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) states in the US.
    - 58% of these are family doctors (259) and 11% are BC MoH generalists (49).
    - 7% are located in rural areas (RST, or 16% RSA)).
- Of those with combined status[6], 87% (350/402) of those who are currently practicing have remained in BC, compared with 34% (94/274) who only did UGME at UBC.

A full breakdown of these numbers by year and by undergraduate program site (and including findings by health authority) is presented in Appendix C-5 to C-11.

Undergraduate program outcomes: What is the impact of the distributed program?

This section provides an overview of the overall impact of the distribution of UBC FoM to date, based on the cohort of UBC FoM trainees who entered UGME between 2004 and 2012.

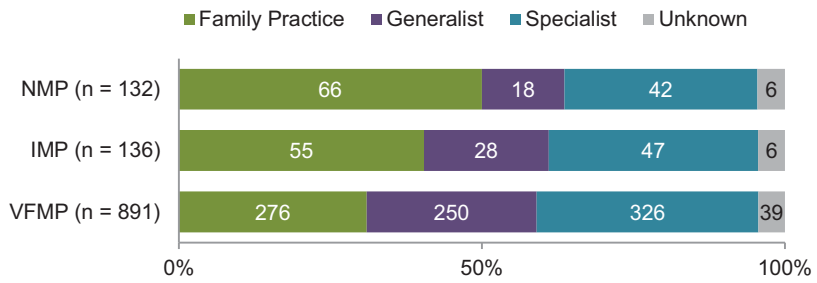
Training Outcomes

Impact of the distributed program on PGME training specialty

Of those who entered UBC UGME post-distribution (entered between 2004 and 2008, graduated between 2008 and 2013), there are differences between the postgraduate training specialty choices of those who attended the different distributed sites.

[6] Combined status trainees are those who entered UBC UGME between 2000 and 2012 and went on to UBC PGME.

Figure 12: PGY1 training specialty choice of post-expansion UBC UGME trainees by training site (N = 1159)



Half (50%, 66/132) of those who trained at the NMP chose to train in *family practice*, compared with 40% from the IMP (55/136) and only 31% from VFMP (276/891). In addition, 14% of graduates from the NMP (18/132) entered *generalist specialties,* compared with 21% from the IMP (28/136) and 28% from VFMP (250/891).

These findings suggest that those in the NMP are more likely to choose family practice, while trainees from other sites may be more interested in other specialties (Figure 12).

Impact of the distributed program on PGME training location

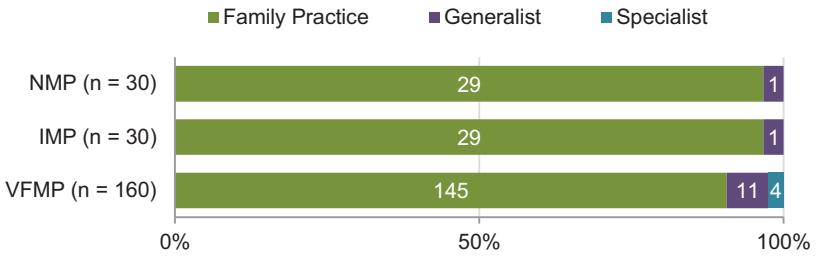
To date, 51% of post-distribution UBC UGME entrants have entered PG training in BC and 49% have gone on to train in other provinces. At this point, a larger proportion of VFMP graduates have remained in BC versus IMP and NMP graduates (see C-5), although this may change in future.

Practice Outcomes

Impact of the distributed program on practice specialty

As demonstrated in Figure 13, only a small number of post-expansion UBC UGME entrants (2004 to 2012) are currently practicing, and the vast majority are family practice physicians. Only a very small number (n = 17) of generalists and specialists are in practice.

Figure 13: Practice specialty of post-expansion UBC UGME trainees by training site (N = 220)



Impact of the distributed program on practice location – Inside versus Outside BC

Following creation of the distributed program, it was anticipated that a greater **proportion** of physicians would remain in BC to practice following completion of training. A total of 63% of post-expansion *family practitioners* (Figure 14) that are currently in practice are located in BC, which is very similar to the number in BC prior to expansion, although the number may change once more trainees have entered practice. Insufficient numbers of generalist and specialists have entered practice to report at this stage.

When reviewing any differences by program site (Figure 15), it currently appears as though a larger proportion of trainees from VFMP stayed in BC, than from other sites (IMP or NMP), although these numbers may be skewed due to the small numbers of trainees currently in practice.

Figure 14: Proportion of post-expansion UBC UGME trainees practicing in BC (N=203) (Family practice only)

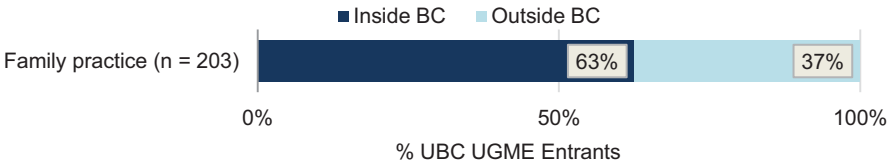
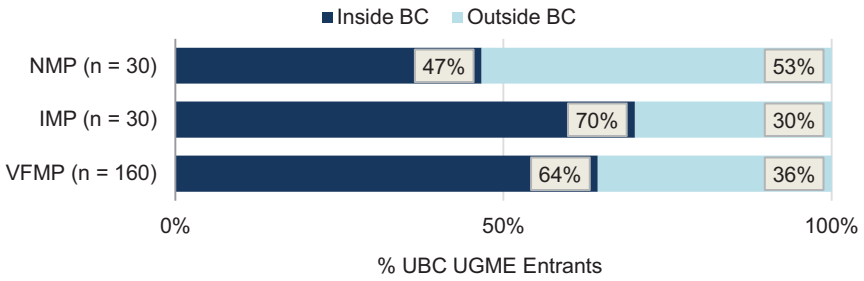


Figure 15: Practice location (inside/outside BC) of post-expansion UBC UGME trainees by training site (N=220)



Impact of the distributed program on practice location – By Health Authority

It is also very early to identify whether the introduction of the UGME distributed program can be associated with an increase in the number or proportion of UBC-trained physicians choosing to practice in a particular health authority. The current distribution can be seen in Appendix D.

Figure 16 shows the current breakdown of the practice location of the BC-based physicians (who entered UGME between 2004 and 2012) by training site.

It is clear that a substantial proportion of those studying in the NMP chose to remain in the NHA upon completion of training (71%), and more than one-third (38%) of those training in the IMP chose to remain in the Vancouver Island Health Authority post-training. These findings suggest that there may be an association between entry into a particular UGME distributed training site and the location or health authority where individuals choose to practice upon completion of training.

Figure 16: Practice location (BC health authority) of post-expansion UBC UGME trainees by training site (N = 138)

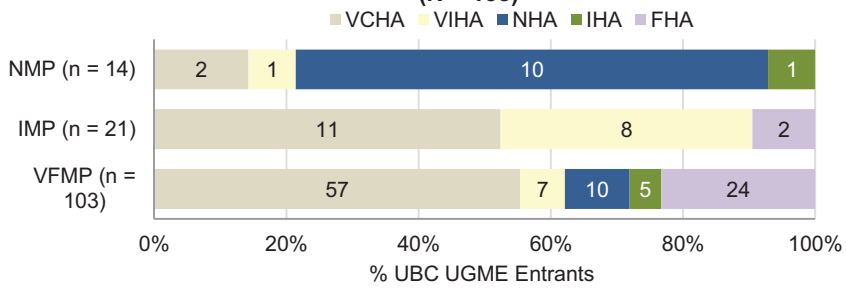
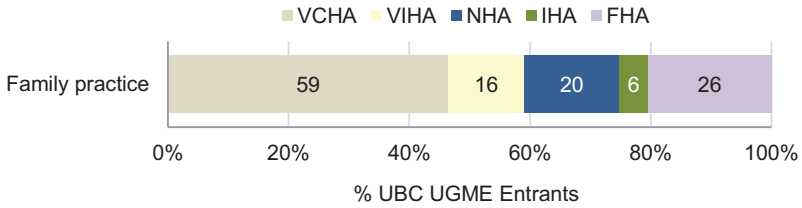


Figure 17: Proportion of post-expansion UBC UGME trainees practicing in BC Health Authorities (N = 127) (Family practice only)



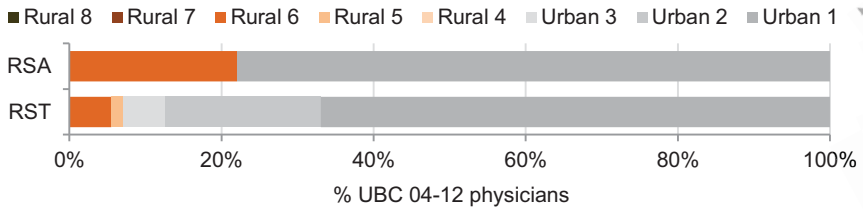
When reviewing these data specifically for family practice, preliminary findings show that for the UGME entrants from 2004 to 2012 who are currently located in BC, 16% (20/127) are currently practicing in the NHA, compared with only 6% (2/33) who entered in 2003. Although these numbers are small and should be reviewed with caution, they hint at a promising future.

Impact of the distributed program on practice location – Rural Practice

Currently, the numbers of UGME entrants from 2004 to 2012 who are in practice are minimal so estimating the numbers that will eventually end up practicing in rural areas is difficult. The current distribution can be seen in Appendix E. According to the RST definition, 10% (20/203) of those now practicing as family physicians are located in rural areas across Canada (Not shown, RSA definition not relevant across Canada).

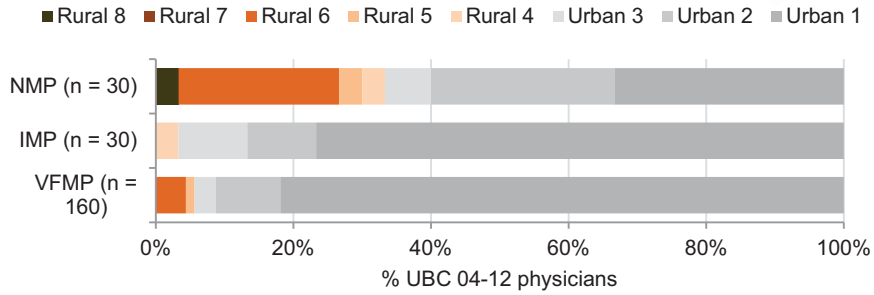
A total of 22% (28/127) family practice physicians are located in rural (RSA) areas in BC (Figure 18; compared with 7% with RST, 9/127).

Figure 18: Proportion of post-expansion UBC UGME trainees practicing in rural BC (N = 127) (Family practice only)



As demonstrated in Figure 19, a much larger proportion of those who had trained at NMP are now practicing in rural areas across Canada (33%, 10/30), compared with IMP (3%, 1/30) or VFMP (6%, 9/160). However, as with all of these practice location findings, the number should be reviewed with caution, as much of the cohort is still in training.

Figure 19: Practice location (rural Canada) of post-expansion UGME trainees by training site (N=220)



In 2001, according to government reports[7] the most rural areas had 14.9 health care providers per 1000 population compared to 24.6 in the least rural areas; UBC FoM distribution may contribute to a more equal spread of physicians in urban and rural areas over time.

[7] http://www.rural.gc.ca/RURAL/display-afficher.do?id=1245089374518&lang=eng

Part 2: UBC FoM Postgraduate Program

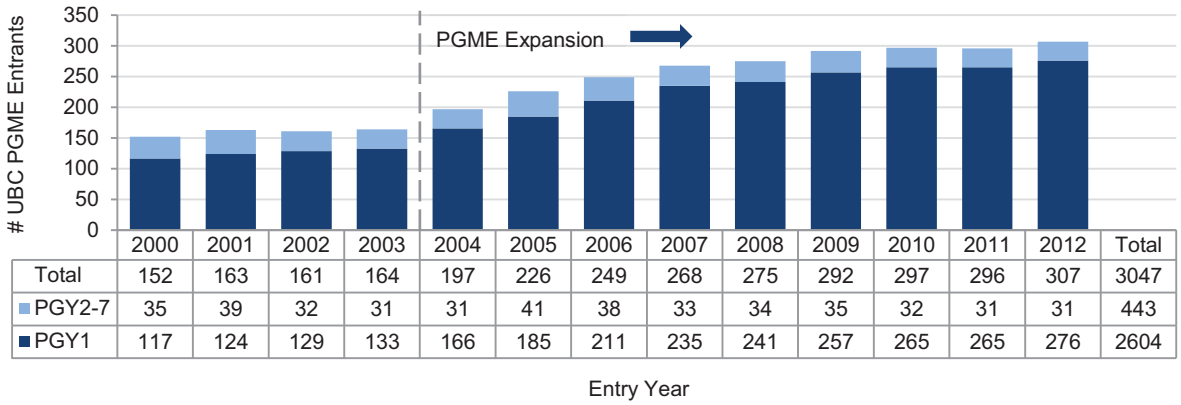
Postgraduate training profile: What are the characteristics of UBC trainees?

This section details characteristics of UBC FoM trainees who entered PGME training between 2000 and 2012. Measures are reported for UBC entry year and by other variables where relevant.

Number of Trainees Entering UBC PGME from 2000-2012

During the period 2000 to 2012, 3047 trainees entered UBC PG, with 2604 of those entering PGY1 positions. There were 276 PGY1 entrants in 2012, compared with only 133 in 2003 (Figure 20, Appendix F-1).

Figure 20: Number of trainees entering UBC PGME pre- and post-expansion (N = 3047)

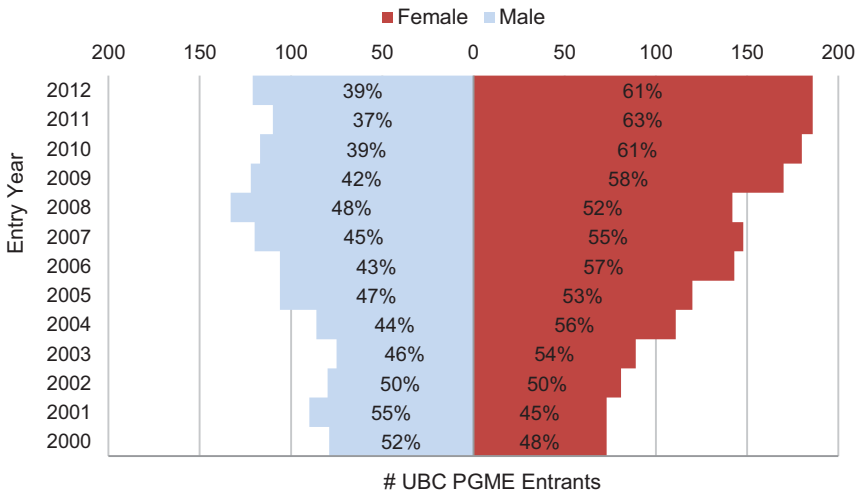


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Total	152	163	161	164	197	226	249	268	275	292	297	296	307	3047
PGY2-7	35	39	32	31	31	41	38	33	34	35	32	31	31	443
PGY1	117	124	129	133	166	185	211	235	241	257	265	265	276	2604

Sex distribution by PGME entry year

The proportion of females entering UBC PGME increased from 48 to 61% from 2000 to 2012 (Figure 21); this increase was similar to national trends[8].

Figure 21: Sex distribution of UBC PGME trainees by entry year (N=3047)



[8] http://www.caper.ca/~assets/pdf_Specialties_Overview_All_Specialties_2011.pdf

Age at PGME entry

The average age of trainees entering UBC PGME from 2000 to 2012 was 29 years.

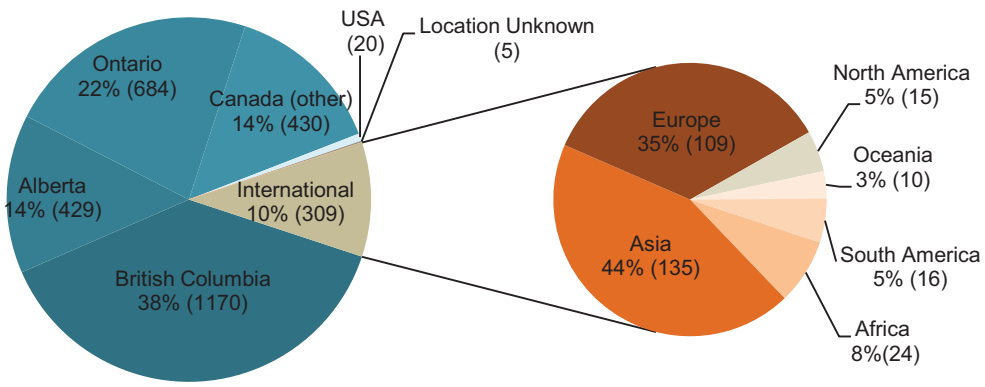
Aboriginal status of PGME trainees

As part of its social responsibility and accountability mandate, UBC FoM aims to improve access to admit more students that are aboriginal. To date, information on the numbers of aboriginal individuals entering residency programs is not available. Of those who attended UGME at UBC, at least 17 went on to UBC for PG training.

Location of UGME Training

Overall, 90% of UBC UGME 00-12 PGME trainees (2733/3047) completed undergraduate MD training in Canada or the United States (US)[9], with 38% (1170/3047) graduating from UBC (Figure 22). The remaining 10% (309/3047) of trainees completed training at a medical school outside of Canada/US.[10] Of those who trained at international medical schools, the majority trained in Asia (135/309) or Europe (109/309). For a breakdown of the countries where international trainees completed their MD degrees, please refer to Appendix F (Table F-3).

Figure 22: Location of UBC PGME trainees' MD undergraduate training institution (N = 3047)



Nearly all postgraduate entrants from 2000 to 2012 were permanent residents or citizens of Canada (3032/3037).

Current practice status of UBC PGME trainees

Of the 3047 individuals who entered UBC PGME between 2000 and 2012, 1967 (65%) are now out of training and have a valid practice location (Table 4). The remaining individuals were either (i) in postgraduate training (n=1050 (34%)), (ii) lost to follow-up with no practice location information available (n=21 (0.7%)), or (iii) not practicing (n=9 (0.3%)). Reasons why a physician may not have valid practice location information available include: transition from training to practice, practice out of country, change of profession, loss of license, or death.

Because of the large numbers of UBC PGME entrants in training, all data relating to practice status presented in this report should be reviewed with caution. For a more detailed breakdown of practice status, see Appendix F (Table 4).

[9] Directory of LCME accredited medical education programs http://www.lcme.org/directry.htm

[10] These are distinct from those international medical graduates (IMGs) named according to funding allocations specific for IMG trainees. In 2003, the MoH designated funding to expand a program of PGME from 2 to 18 IMG positions in family practice and a generalist specialty PGME. Current plans are to further expand and train an additional 40 IMGs in family practice over the next 5 years. Apart from entering PGME training through designated positions, IMGs may also enter PGME training through the 2nd iteration of Canadian Residency Matching Service (CaRMS).

Table 3: Description of UBC PGME trainees' status

UBC PGME Trainees		As of Spring 2013	
		n	%
In Training		1050	*34.4%*
Out of Training	In Practice	1967	*64.6%*
	Lost to Follow-up	21	*0.7%*
	Not practicing	9	*0.3%*
Total UBC Trained		3047	*100%*

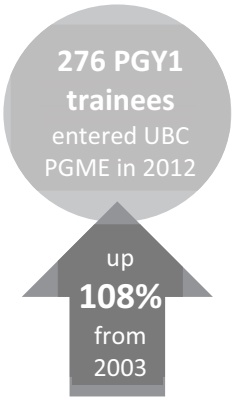
Postgraduate program outcomes: What is the impact of expansion?

Training Outcomes

Impact of expansion on PGME training numbers

Since the expansion in 2004, there has been a 108% increase in the number of *PGY1 entrants* to UBC PGME from 133 in 2003 to 276 in 2012 (Figure 22 and Appendix F). There has been an 87% increase in the number of *total entrants* (i.e. PGY1-PGY7) to UBC PGME from 164 in 2003 to 307 in 2012. As postgraduate trainees provide health services, these increases translate into increased capacity in the province.

Figure 23: Number of UBC PGME trainees entering in 2003 versus 2012



One of the goals of expansion was that the number of CaRMs entry positions to Y4 graduates was equal or greater than the pan-Canadian ratio. PGY1 (non-IMG) entry spots (based on first iteration Carms match) and Y4 graduate numbers are outlined in Table 5. The ratio was 1:1.2 in 2012-13.

Table 4: Ratio of filled UBC PGY1 spots (non-IMG) to Y4 graduate numbers

	2011-12	2012-13
	n	n
Y4 graduates	*256*	*256*
PGY1 positions (CMG)	*266*	*276*
PGY1 positions (IMG)	*26*	*34*
Total positions	*292*	*310*
Ratio UG: PG (non-IMG)	*1:1.04*	*1:1.10*
Ratio UG: PG (including IMG)	*1:1.14*	*1:1.21*

Impact of expansion on PGME training specialty

There has been a 5% increase in the proportion of UBC PGME PGY1 trainees entering into family practice and 8% into generalist specialties from 2003 to 2012 (Table 6).

Table 5: PGY1 specialty choice of PGME trainees on entry to UBC PGY1

PGY1 Specialty Choice	2003		2012		All years	
	n	%	n	%	n	%
Family Practice	**51**	*38%*	**120**	*43%*	**1031**	*40%*
Generalist Specialties	**28**	*21%*	**79**	*29%*	**691**	*27%*
Internal Medicine	14	*11%*	44	*16%*	381	*15%*
Pediatrics	7	*5%*	14	*5%*	136	*5%*
Psychiatry	7	*5%*	21	*8%*	174	*7%*
Other Specialties	**54**	*41%*	**77**	*28%*	**882**	*34%*
Total	**133**	*100%*	**276**	*100%*	**2604**	*100%*

Note: PGY1 specialty choice over-represents the number of students training in a generalist specialty as many trainees sub-specialize later in their training program.

Expansion resulted in large increases in the absolute numbers of trainees entering PGME across all specialty types (Table 6). The number of trainees choosing to enter UBC PGME in *family practice* increased by 135% between 2003 and 2012 (51 to 120), and numbers entering *specialist* training increased by 43% (54 to 77). There was a 182% increase (28 to 79) in the number of trainees entering UBC PGME in a *generalist* specialty (Figure 24, Appendix G-1).

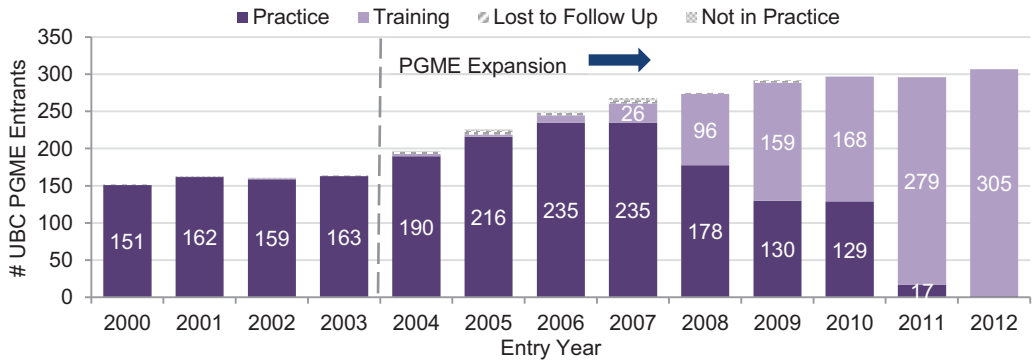
Figure 24: PGY1 specialty choice of PGME trainees on entry to UBC PGY1

Practice Outcomes

Impact on expansion on numbers of PGME-produced physicians

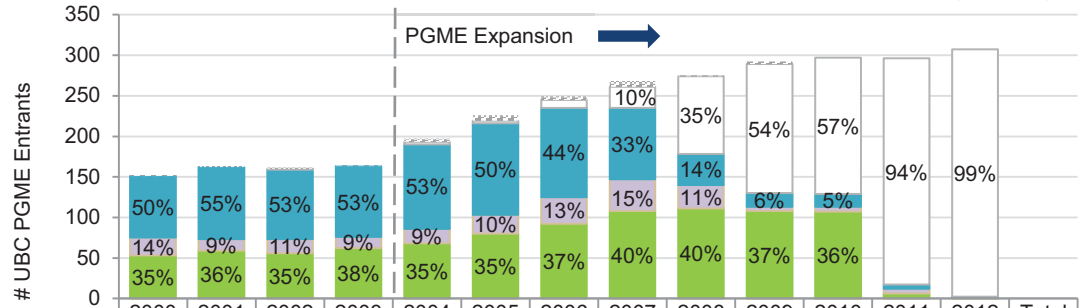
Expansion has resulted (and will continue to) in an increase in the absolute numbers of physicians produced by UBC PGME each year. Of those who entered UBC PGME in 2003, 163 trainees (99%) are now practicing, independent physicians. From the first year post-expansion, 190 trainees (96%) are already in practice (Figure 25).

Figure 25: Current status of UBC PGME trainees by entry year (N = 3047)



Impact of expansion on practice specialty

Figure 26: Current practice specialty of UBC PGME trainees by entry year (N=3047)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
TOTAL	152	163	161	164	197	226	249	268	275	292	297	296	307	3047
Not in Practice	0	1	1	0	1	2	1	3	0	0	0	0	0	9
Lost to Follow Up	1	0	0	1	3	5	3	4	1	3	0	0	0	21
Training	0	0	1	0	3	3	10	26	96	159	168	279	305	1050
Specialist	76	89	86	87	104	113	110	88	38	17	16	5	1	830
Generalist	22	14	17	14	18	23	33	39	29	5	6	6	0	226
Family Medicine	53	59	56	62	68	80	92	108	111	108	107	6	1	911

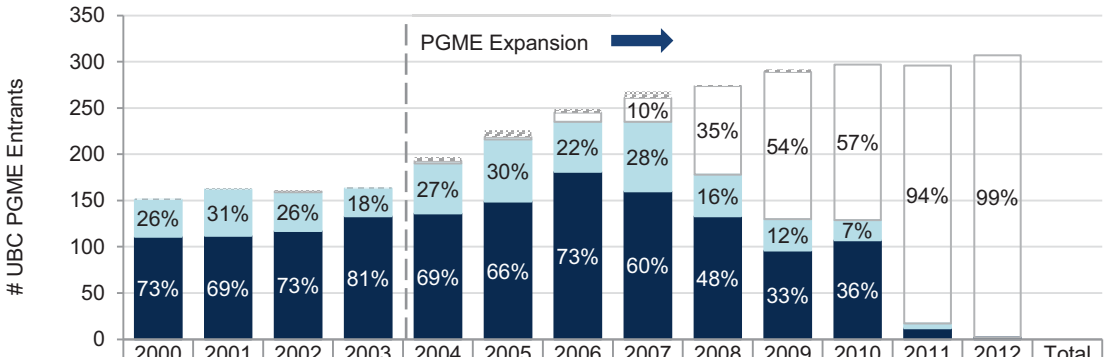
Entry Year

Following expansion, there has been an increase in the **numbers** of UBC PGME trainees entering practice across all specialty types (Figure 26). The **proportion** of UBC PGME trainees entering each practice type has been relatively stable over time, however with expansion this translates into **large increases in the absolute numbers of practicing physicians**. For example, of the UBC PGME trainees that entered in 2003, 62 went into family practice, compared to 107 of those who entered in 2010, a 73% increase. Of all 1967 practicing physicians from the period, 46% (911/1967) are family practitioners, 11% (226/1967) are generalists, and 42% (830/1967) are specialists (Appendix G-3).

Impact of expansion on practice location – Inside versus Outside BC

Overall, almost three quarters (74%, 1449/1967) of those currently practicing physicians who entered UBC PGME training between 2000 and 2012 have remained in BC (Figure 27), and 96% are in Canada (1891/1967; 442 outside

Figure 27: Number of UBC PGME trainees practicing in BC by entry year (N = 3047)



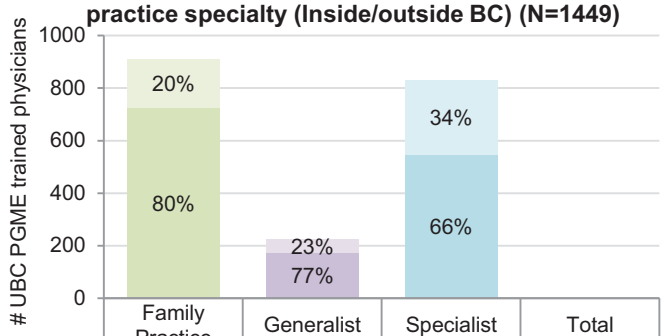
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
TOTAL	152	163	161	164	197	226	249	268	275	292	297	296	307	3047
Not in Practice	0	1	1	0	1	2	1	3	0	0	0	0	0	9
Lost to Follow Up	1	0	0	1	3	5	3	4	1	3	0	0	0	21
Training	0	0	1	0	3	3	10	26	96	159	168	279	305	1050
Outside of BC	40	50	42	30	54	67	54	75	45	34	22	5	0	518
BC	111	112	117	133	136	149	181	160	133	96	107	12	2	1449

BC) (Appendix G-2). This is similar to the numbers (over 60%) that remained in the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) states in the US.

Program expansion has begun to create a trend toward an increase in the absolute numbers of physicians remaining in the province to practice upon completion of training. At this point in time it is too early to determine whether a greater proportion of physicians are remaining in BC to practice as many are still in training.

Of those currently practicing as **family physicians**, 80% (728/911) are practicing in BC, 19% (175/911) are practicing in other Canadian provinces, with the remaining 1% (8/911) practicing outside of Canada (Figure 28).

Figure 28: UBC PGME trained physicians' practice specialty (Inside/outside BC) (N=1449)



	Family Practice	Generalist	Specialist	Total
TOTAL	911	226	830	1967
Outside BC	183	52	283	518
BC	728	174	547	1449

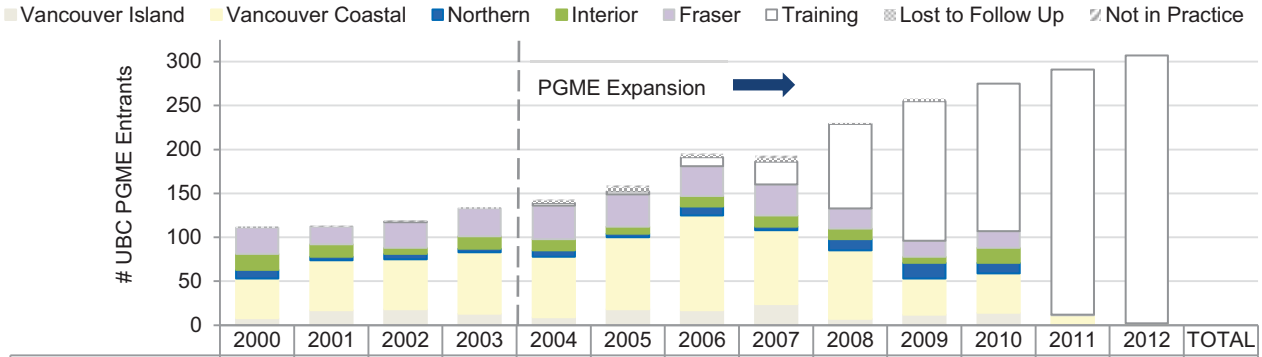
Of those currently practicing a **generalist specialty**, 77% (174/226) are practicing in BC, 17% (39/226) are practicing in other Canadian provinces, and 6% (13/226) are practicing outside of Canada.

Of those currently practicing as **specialists**, 66% (547/830) are practicing in BC, 27% (228/830) are practicing in other Canadian provinces, and 7% (55/830) are practicing outside of Canada.

Impact of expansion on practice location – By Health Authority

It is somewhat early to determine whether expansion has resulted in an increase in the number or proportions of UBC PGME trained physicians choosing to practice in a particular health authority. Figure 29 shows the breakdown of practice location of UBC PGME trained physicians by health authority (Appendix G-4 to G-9).

Figure 29: Number of UBC PGME trainees practicing in BC Health Authorities by entry year (N = 2529)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
TOTAL	112	113	119	134	143	159	195	193	230	258	275	291	307	2529
Not in Practice	0	1	1	0	1	2	1	3	0	0	0	0	0	9
Lost to Follow Up	1	0	0	1	3	5	3	4	1	3	0	0	0	21
Training	0	0	1	0	3	3	10	26	96	159	168	279	305	1050
Fraser	30	20	29	32	38	37	34	35	23	18	19	1	0	316
Interior	18	14	7	14	13	8	12	13	12	7	17	0	0	135
Northern	10	4	6	4	7	4	10	4	13	18	12	0	0	92
Vancouver Coastal	45	57	57	70	69	82	108	84	78	41	45	10	2	748
Vancouver Island	8	17	18	13	9	18	17	24	7	12	14	1	0	158

Entry Year

Just over half (52%) of the BC-based UBC PGME trained physicians (n = 1449) are practicing in Vancouver Coastal Health Authority. Following expansion, the number of UBC PGME trained physicians practicing in Vancouver Coastal Health Authority increased, although numbers in recent years are smaller because many physicians are still in training.

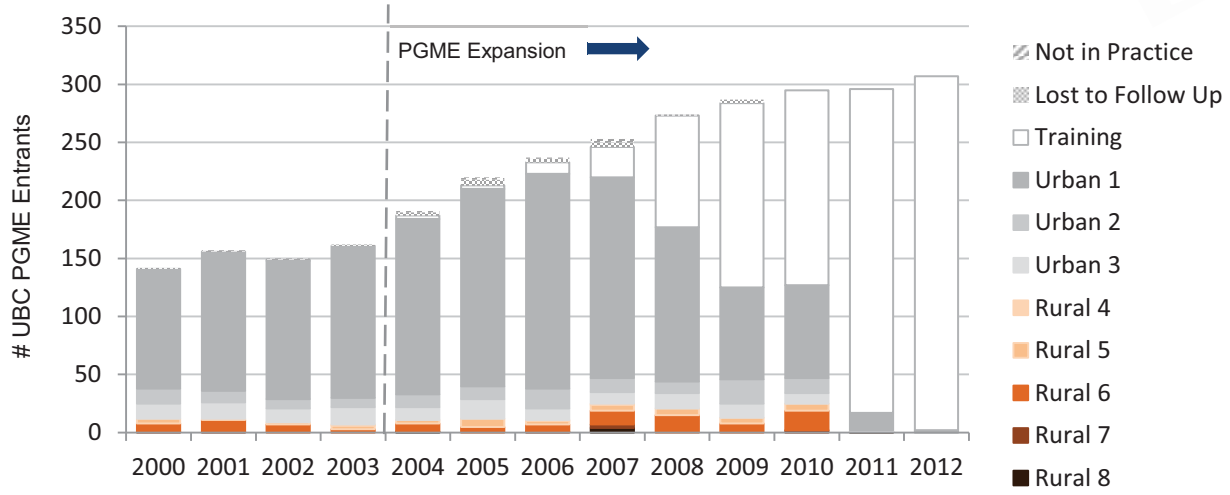
Even though 57% of UBC PGME entrants from 2010 are still in training, 12 physicians from that cohort are already practicing in the Northern Health Authority (NHA), compared with only 4 from 2003 (a year in which 100% of trainees are in practice).

Impact of expansion on practice location – Rural Practice

In Canada (RST)

Of the 1891 UBC PGME trained physicians practicing in Canada, 8% (159/1891) are practicing in rural communities across Canada. Seven percent (7%, 123/1891) are practicing in rural communities in BC and the remainder are practicing in other provinces. While is too early to identify whether expansion has increased the proportion of UBC PGME trained physicians practicing in rural areas of Canada, an increase has already been observed in terms of absolute numbers. Of those UBC PGME trainees entering in 2003, 7 went on to practice in rural areas in Canada, compared to 25 of the UBC PGME trainees entering in 2010 (Figure 30). This increase in rural practitioner numbers has occurred despite the fact that 168 UBC PGME entrants from 2010 have yet to finish training. The current distribution are presented in Appendix G.

Figure 30: Practice location of UBC PGME Trained Physicians (rural Canada) by entry year (N = 3047)



In BC

The numbers of UBC PGME physicians currently practicing in rural areas of BC vary depending on the rural definition being used (Appendix G-4 to G-8). More UBC PGME physicians are classified as practicing rural medicine using the RSA (BC) definition, compared to the RST (Canada) definition.

RST (Canada): A total of 8% (123/1449) of UBC PGME trained BC-based physicians are practicing in rural communities. Of these, 117 are family physicians, 2 are generalists, and 4 are specialist physicians (Figure 31).

RSA (BC): A total of 18% (260/1449) of UBC PGME trained BC-based physicians are practicing in rural areas. Of these, 225 are family physicians, 9 are generalist physicians, and 26 are practicing in other specialties (Figure 32).

As might be expected, more family physicians practice in rural areas than generalist or specialty physicians who require resources that are available in tertiary care hospitals more commonly located in urban centers.

Figure 31: Practice location of UBC PGME trained physicians (rural BC, RSA) by specialty (N = 1449)

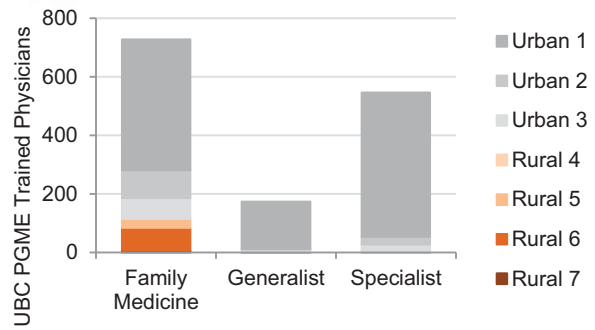
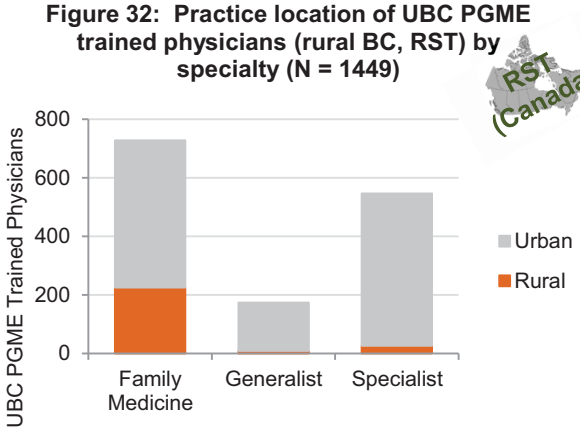


Figure 32: Practice location of UBC PGME trained physicians (rural BC, RST) by specialty (N = 1449)



It is still too early to identify whether expansion has resulted in an increase in the proportions of UBC PGME trained physicians now practicing in rural BC. However, an increase has already been observed in terms of absolute numbers according to both the RST and RSA definition. Of those UBC PGME trainees entering in 2003, 7 went on to practice in rural areas according to the RST definition, compared to 20 from the UBC PGME trainees entering in 2010 (Figure 33). According to the RSA definition, 21 UBC PGME trainees entering in 2003 are now in rural practice, compared to 32 from the 2010 UBC PGME entrants (Figure 34). These increases in rural practitioner numbers have been observed despite the fact that 168 of UBC PGME entrants from 2010 have yet to finish training and enter practice.

Figure 33: Practice location of UBC PGME trained physicians (rural BC, RST) by entry year (N = 3047)

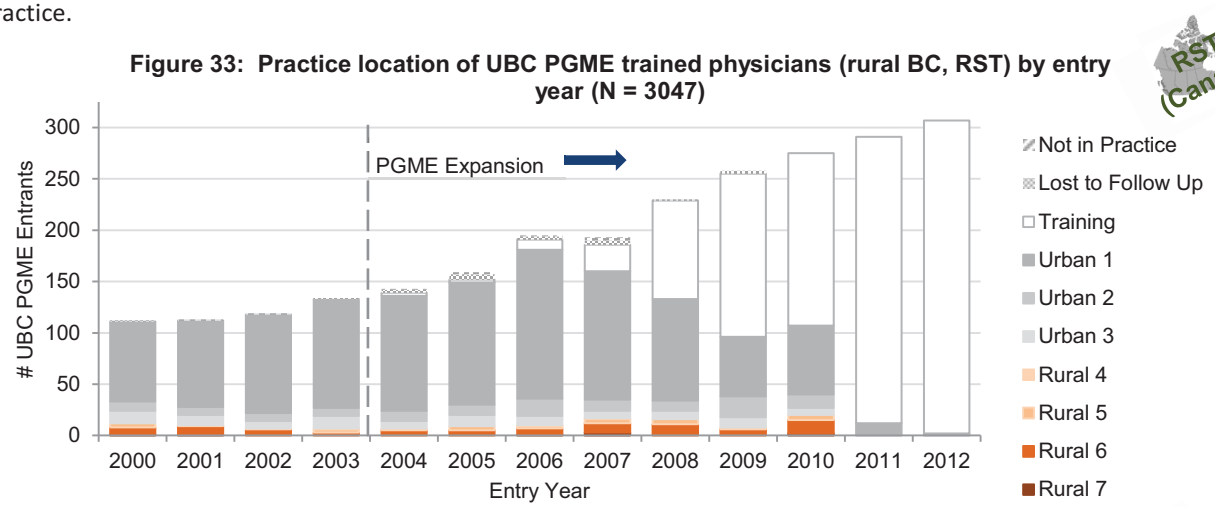
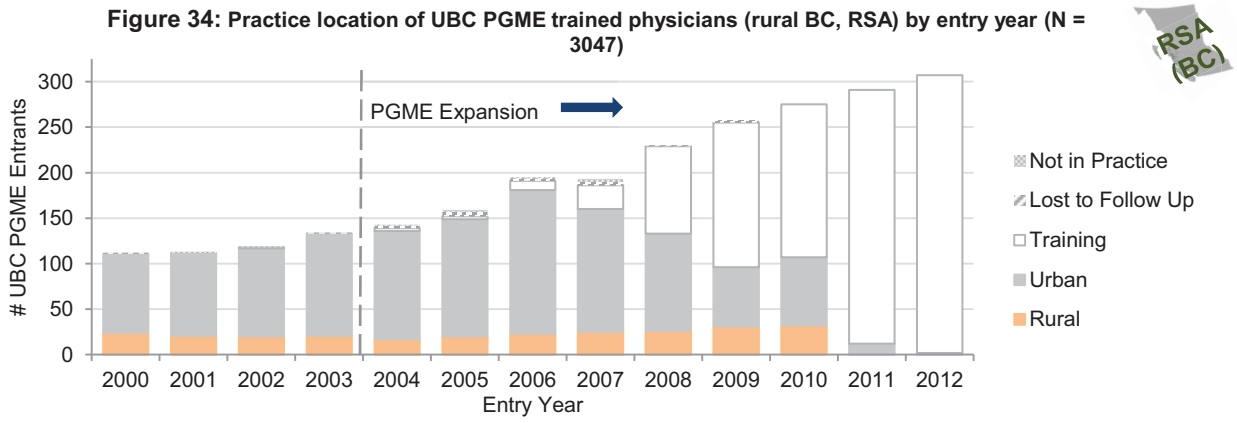


Figure 34: Practice location of UBC PGME trained physicians (rural BC, RSA) by entry year (N = 3047)



Discussion

In the early 2000s, British Columbia (BC) was struggling with a severe physician shortage in parts of the province, in terms of both numbers of physicians per capita, and types of physicians. Combined with substantial concern over the impending retirement of a large proportion of physicians, and the ever increasing medical needs of an aging population, the provincial government decided to take action. In order to meet the needs of communities across BC, both the undergraduate and postgraduate medical education programs (UGME and PGME) of UBC FoM were significantly expanded. It was anticipated that an increased number of trainees, and distribution of training to academic campuses, hospitals and communities across the province would contribute towards an increase in both the numbers and types of physicians (in particular those who support primary care) that end up practicing in BC.

This report reviewed the recent training and practice outcomes of trainees who entered UBC FoM between 2000 and 2012. Due to the significant length of medical training programs, the effects of the expansion and distribution on eventual practice location and specialty of trainees are just starting to be observed. 2013 is the first year in which specialist trainees who entered UBC for undergraduate training after expansion will complete residency training and start to enter independent practice. Upon moving into independent practice, they may take time to identify where they wish to settle, so it may be several years before a more permanent practice location can be determined.

Program expansion has increased the numbers of undergraduate and postgraduate trainees produced by UBC, boding well for future physician capacity in the province. Increases have occurred in all training specialties, in particular family practice and generalist positions that support primary care (i.e. internal medicine, pediatrics, psychiatry). As suggested previously (Bates et al, 2013), the presence of the medical education programs have enticed physicians to the province to teach. Combined with the increased service capacity provided by the vastly increased number of clinical residents during their training, and increases in the numbers of UBC trainees remaining in BC upon completion of practice, the downstream effects of UBC's contribution to the province's physician resourcing could be substantial. A positive trend of physician numbers is starting to be observed in rural areas, and across health authorities. The retention rate in BC of physicians that have trained at UBC for both UGME and PGME is very high. Any increases in the numbers of undergraduates staying at UBC for postgraduate training could have a very positive effect on the eventual number of trainees who choose to stay in BC to practice. According to a 2010 report (CIHI, 2010) on physician supply, it appears that overall numbers of physicians to population have increased over recent years (from 202/100,000 in 2006 to 213/100,000 in 2010). While it is not possible to attribute this increase on the expansion of UBC FoM, it is certainly a positive trend that the UBC medical education programs can help to sustain.

As part of UBC FoM's social responsibility and accountability initiative, the number of aboriginal trainees admitted to the undergraduate program has increased substantially over recent years. Once more members of this contingent enter practice it will be interesting to track their outcomes to determine whether they choose to practice in locations and specialties associated with aboriginal communities.

In terms of distribution, findings reveal that training site may impact upon the residency specialty training choice of MD graduates. Due to the large number of post-expansion trainees still in training, and a lack of data regarding postgraduate training location, it is difficult to draw conclusions about the impact on practice outcomes of the distribution of UBC FoM at this time. Early findings suggest that there may be an association between entry into a particular training site and the health authority or rurality of the location in which physicians end up practicing. For example, more than two-thirds of those who trained in the NMP who have entered practice have chosen to remain in the Northern Health Authority to date. It will be interesting to observe whether these trends are maintained as more data become available.

Measuring the impact of program expansion and distribution is complex, and, as identified previously, there are various cautions associated with this report: (i) due to the varying length of time that it takes medical trainees to enter practice, it is difficult to obtain a full measure of impact at this time; (ii) due to the transient and variable nature of individual practice trajectories and patterns, the complexities in measuring physician supply, and the difficulties in obtaining information on individuals once they have left UBC FoM, longer term data is subject to

inconsistencies and gaps; and (iii) the definition of rurality used by provincial decision makers (Rural Subsidiary Agreement (RSA)) tends to give a higher estimate of the number of individuals in rural areas than the rural small town (RST) definition, which is used by decision makers elsewhere in Canada. Despite these limitations, the initial gains occurring as a result of the UBC FoM expansion and distribution are very promising. Various processes and research are being developed to enhance measurement methods in the future.

In the future, more complete data sets, and further development of measurement methods, will help to provide a more accurate depiction of UBC's contribution to physician supply in the province, as more trainees enter the workforce, and could contribute to the development of policies that address physician needs across BC. In particular, monitoring of physician numbers practicing in rural, remote and other underserved communities (e.g. aboriginal), will be of great interest to decision makers both in BC, and across the country.

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