



# Public Report

MEDICAL COMMUNICATION ASSESSMENT PROJECT (M-CAP):  
AN ALBERTA PROJECT FOR INTERNATIONAL MEDICAL GRADUATES

■ 2009



THIS PROJECT HAS BEEN MADE POSSIBLE THROUGH FUNDING FROM THE  
GOVERNMENT OF CANADA, (CITIZENSHIP AND IMMIGRATION CANADA)  
& ALBERTA, EMPLOYMENT AND IMMIGRATION



# ACKNOWLEDGEMENTS

**M-CAP would like to acknowledge the following individuals and organizations for their commitment, participation, and contributions to the development and success of the project:**

■ **FUNDERS:**

The Government of Canada, (Citizenship and Immigration Canada) & Alberta, Employment and Immigration

■ **FACULTY OF MEDICINE, UNIVERSITY OF CALGARY:**

Dr. Tom Feasby, Dean

■ **FACULTY LIAISON:**

Dr. Claudio Violato

■ **FACULTY OF MEDICINE AND DENTISTRY, UNIVERSITY OF ALBERTA:**

Dr. George Elleker, Associate Dean, Postgraduate Medical Education

■ **ALBERTA INTERNATIONAL MEDICAL GRADUATE PROGRAM**

Dr. Lubna Baig, Managing Director

■ **ALBERTA MEDICAL ASSOCIATION:**

Lyle Middlesteadt

■ **COLLEGE OF PHYSICIANS AND SURGEONS OF ALBERTA:**

Kate Reed

■ **PROGRAM COORDINATOR:**

Cayti Beyer

■ **ADMINISTRATIVE SUPPORT:**

Oli Siska, Adrienne Beattie, Bonnie Phuong

■ **INSTRUCTORS:**

Greg Gies, Kathleen Hall, Vincent Kelly, Katherine Leonard

■ **LANGUAGE CASE OBSERVERS/ASSESSORS:**

Deidre Lake, David Watt, Kathleen Hall, Katherine Leonard, Vince Kelly, Greg Gies, Wendy Chambers, Jeanine Howard-Tripp, Kathy Dawson, Pamela Heath

■ **PHYSICIAN CASE OBSERVERS/ASSESSORS:**

Dr. Melissa Jack, Dr. Lara Nixon, Dr. Mal Kaminiska, Dr. Dr. Jean Worms, Dr. Lillian Au, Dr. Arif Bhimji, Dr. Michael Howard-Tripp, Dr. N. M. Alhulaimi, Dr. Amir Ayyobi, Dr. Alex Vukovic

■ **PRECEPTORS FOR 1-DAY OBSERVERSHIPS AND PRACTICUM PLACEMENTS:**

Centre for Preventative Medicine, Dr. Adam Poradzisz, Dr. Adel Gabriel, Dr. Amathul Danial, Dr. Andrew Sher, Dr. Anna J. Malanowska-Kantoch, Dr. Anton Nel, Dr.

Asifa Riaz, Dr. Baljinder Mann, Dr. Bawa Hussam, Dr. Bing Li, Dr. Bob Cowie, Dr. Chris Musah, Dr. Darwish, Dr. Dave Sinha, Dr. Don Korzenowski, Dr. Elizabeth Mackay, Dr. Elijah Dixon, Dr. Farook Oosman, Dr. Grace Bokenfohr, Dr. Joaquin Palencia, Dr. John McSorley, Dr. JP Leung, Dr. Juan Garcia, Dr. Kamal Khiavi, Dr. Khalida Tariq, Dr. Kourosh Dinyari, Dr. Lilian Au, Dr. Lily Toma, Dr. M.R.K. Suresh, Dr. Maria Malagon, Dr. Mauricio Monroy-Cuadros, Dr. Michael Harvey, Dr. Mini George, Dr. Miranda Baxter, Dr. Mohammad Hamadeh, Dr. Moustafa Adams, Dr. Mujabeen Hussain, Dr. Narendra Makan, Dr. Narpinder K. Hans, Dr. Neeraj Bector, Dr. Noordin Virani, Dr. Parminder Sandhu, Dr. Prabhu Sonpar, Dr. Prafull Ghatage, Dr. Randall Sargent, Dr. Rasheda Motala, Dr. Rekha Soni, Dr. Riyaz Mohamed, Dr. Ron Young, Dr. Rose Geonzon, Dr. Ross McLeod, Dr. Saeed Ahmadinejad, Dr. Sakina Raj, Dr. Salim Hamid, Dr. Samreen Malik, Dr. Sandy Tam, Dr. Shahida Surmawala, Dr. Sheela Duia, Dr. Tariq Awan, Dr. Thierry Lacaze, Dr. Tuhin Bakshi, Dr. V. Wink, Dr. Zahid Rafiq

■ **PHYSICIAN INSTRUCTORS:**

Dr. Tuhin Bakshi, Dr. Jean Worms, Dr. Melissa Jack

■ **CLINICAL ASSESSORS:**

Dr. Tuhin Bakshi, Dr. Mal Kaminiska, Dr. Alex Vukovic, Dr. Jean Worms, Dr. Arif Bhimji

■ **CASE REVIEWERS:**

Dr. Lillian Au, Dr. Tuhin Bakshi, Dr. Arif Bhimji, Dr. Juan Garcia, Dr. Jaelene Mannerfeldt, Dr. Alex Vukovic.

■ **GUEST SPEAKERS:**

Dr. Hussam Bawa, Dr. Alexandra Harrison, Dr. Shenay Khera, Dr. Bryan Ward.

■ **MEDSKILLS, MULTIMEDIA AND INSTRUCTIONAL RESOURCES:**

Faculty of Medicine, University of Calgary

■ **STANDARDIZED PATIENT PROGRAM**

Faculty of Medicine and Dentistry, University of Alberta

■ **ZEIDLER LEDCOR CENTRE:**

Sylvia Franklin, Jennifer Kam

■ **MEDIAFORCE:**

Joe Bongiorno, Website Developer

■ **VIDEO PRODUCTION TEAM:**

Tracker Productions



# EXECUTIVE SUMMARY

## ■ BACKGROUND

The aim of the M-CAP program is to prepare recent immigrant physicians, referred to as Alberta International Medical Graduates (IMGs) to meet the communication and language requirements associated with Canadian medical practice. The program seeks to accelerate the rate at which IMG's could develop their professional language proficiency through a performance based teaching approach. The approach involves professional actors, medical cases, video taped coaching, language instructors and medical assessors. The premise of the approach is that by increasing the IMG's professional language proficiency, they are better able to demonstrate the scope of their clinical medical skills. This would result in an increased chance of success in moving forward to medical residence positions and then on to medical practice.

The program takes place in two locations: the Faculty of Medicine at the University of Calgary and the Faculty of Medicine and Dentistry at the University of Alberta. It consists of two major components: an intensive 8-week instructional component; and, an instructionally supported 8-week clinical work placement.

## ■ THE PARTICIPANTS

From 92 eligible applicants residing in Alberta, 64 participants were selected based on:

- The successful completion of the required medical knowledge exams – the Medical Council of Canada Evaluating Exam (MCCEE) and the subsequent Medical Council of Canada Qualifying Exam Part 1 (MCCQE1) exam.
- Their previous experience
- Their level of English language proficiency (CLBA L/S 8, R 8, W 8 or equivalent such as TOEFL, IELTS or the ELTPA)

The participants represented 25 countries of origin and 24 first languages. All were Alberta residents with either landed immigrant (67%) or Canadian citizenship (33%) status. They were on average 39 years of age, and had lived in Canada for about 5.4 years. About 10% of the participants had migrated to Alberta from other provinces, specifically to take advantage of the M-CAP program and Alberta's more proactive approach to the professional integration of immigrant physicians.

Fifty five of the participants had completed residence programs as part of their initial medical training. Fifty three participants listed speciality training after their initial residence programs. On average, the participants reported 3.6 years of specialty training and had been in licensed practice for an average of 3.8 years prior to arrival in Canada.

Eighteen of the participants had taken the AIMG OSCE in a previous year and 12 had passed the exam but been unsuccessful in gaining residence positions. Four participants had already passed the MCCQE2 and held Medical Council of Canada licentiate status.



## ■ PROGRAM GOALS

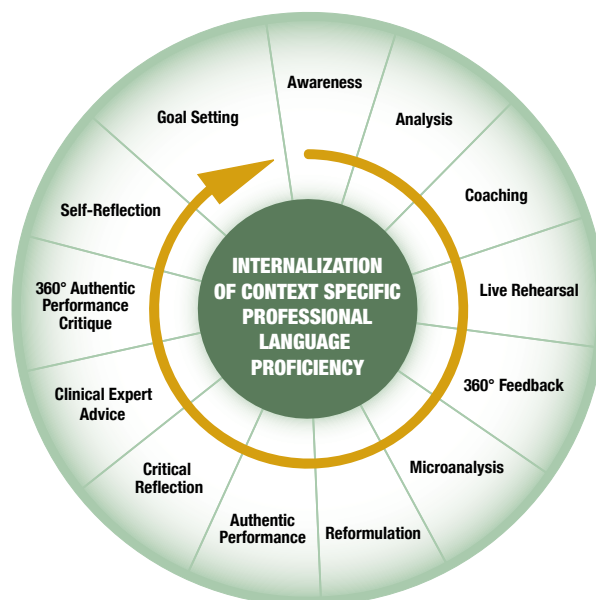
The M-CAP program sought to accountably address the goal of advancing professional integration and language proficiency through the following actions:

1. To provide an Enhanced Language Training (ELT<sup>1</sup>) program for qualified immigrant IMG's in both Calgary and Edmonton.
2. To develop strong ties to the profession by locating the program in the faculties of Medicine at the University of Calgary and the University of Alberta, by creating linkages with the Alberta Medical Association and the College of Physicians and Surgeons of Alberta, and by involving doctors for assessment, instruction and clinical placement.
3. To implement a performance based curriculum aimed at preparation for communication in the Canadian medical context, using medical professionals in the selection of relevant medical communication cases; and by sequencing medical communication cases in order of increasing language difficulty.
4. To track the rate and growth of professional language proficiency across a series of measures assessed by either nationally certified language assessors (CLBA<sup>2</sup>/ELTPA<sup>3</sup>), or experienced physicians in professional settings (ITERS<sup>4</sup>/ OSCE<sup>5</sup>).
5. To calculate the concrete outcomes of professional integration for M-CAP IMG's by tracking and comparing outcomes on the AIMG OSCE, residence positions, clinical assistant employment, licensure and other professional advancements.
6. To seek validation of the program's results through direct feedback from professionals in the field.
7. To engage in ongoing research into the advancement the professional integration process for immigrant IMG's and is applicable across provincial jurisdictions.

## ■ PERFORMANCE BASED MODEL

The model used in the M-CAP program starts from the development of 20 medical case interviews chosen primarily for their increasing degree of communication complexity and secondarily for the degree to which the medical cases represent the kinds of issues faced by practicing physicians in Canada. The M-CAP instructional model advances participants through a weekly cycle of learning stages, aimed at internalizing context specific professional language proficiency. Figure 1 provides a graphic representation of the learning process. After eight weeks, the model moves from structured authentic case work in classroom and practice settings to eight weeks in genuine case work in real clinical settings, where they are supervised and mentored for an average of 25 hours a week and then assessed by practicum physicians on their medical knowledge, professionalism, clinical skills and professional communication and language proficiency.

**FIGURE 1: Internalization of Context Specific Professional Language Proficiency**



1 ELT: Enhanced Language Training  
2 CLBA: Canadian Language Benchmarks Assessment  
3 ELTPA: Enhanced Language Training Placement Assessment  
4 ITER: In-Training Evaluation Report  
5 OSCE: Objective Structured Clinical Exam

## ■ MEASURED OUTCOMES

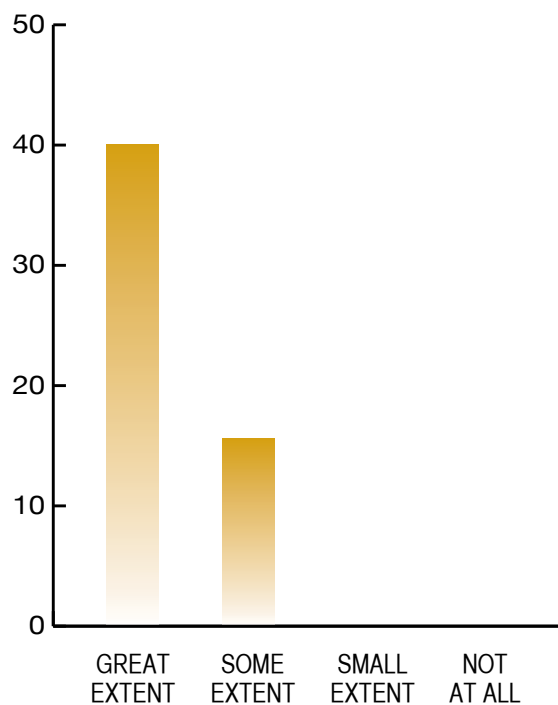
There are five broad areas of measured outcomes that are essential for understanding the impact of the M-CAP program on its goal of accelerating the professional integration of immigrant IMGs. These are:

1. The participants' perceptions of the program and its impact on their personal advancement towards professional practice
2. The practicum physicians assessment of the professional readiness of the IMG's they supervised
3. Measured gains in professional language proficiency across language assessment and medical assessment contexts
4. The impact of the M-CAP program on AIMG OSCE performance in terms of the successful demonstration of clinical skills, communication and language proficiency
5. The concrete results of professional integration related to the attainment of residency positions, licensure, clinical assistant positions, or other professional advancement.

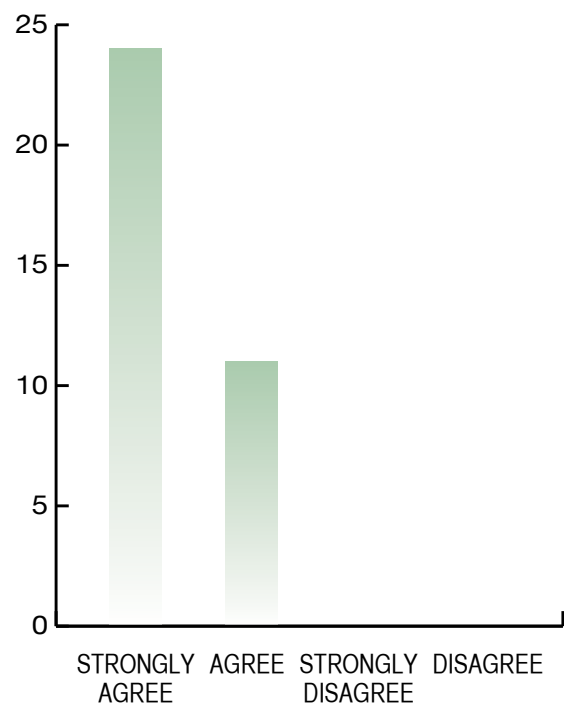
## ■ PARTICIPANT PERCEPTIONS

Participant perceptions of the program's impact can be summarized by their response to two questions: the perceived improvement in their language proficiency for medical practice, and their perceptions about the rate at which these gains were attained. Figures 2 and 3 provide evidence of the participants' perceptions of the outcomes of the involvement in the M-CAP program.

**FIGURE 2: Perceived improvement in Professional Language proficiency for medical practice**



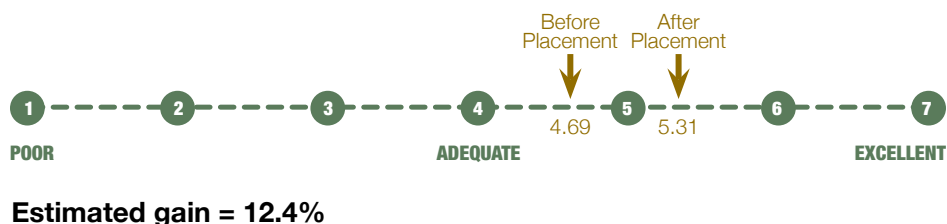
**FIGURE 3: Did your language proficiency develop faster in this style of instruction than in your previous experience?**



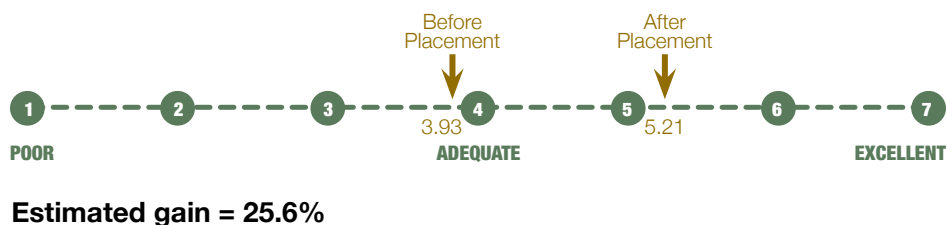
## ■ PRACTICUM PHYSICIAN ASSESSMENT

Practicum physicians were asked to evaluate the M-CAP participants' readiness for Canadian medical practice at the start and the end of the eight week placement, in terms of two variables: their familiarity with the Canadian Medical system and their professional language proficiency for medical practice. The two figures below represent the physicians' perceptions of the growth and readiness of the M-CAP participants from an initial assessment in the first week and a final assessment in the last week.

**FIGURE 4: Pre-Post Estimates by Practicum Physicians of Professional Language Proficiency**



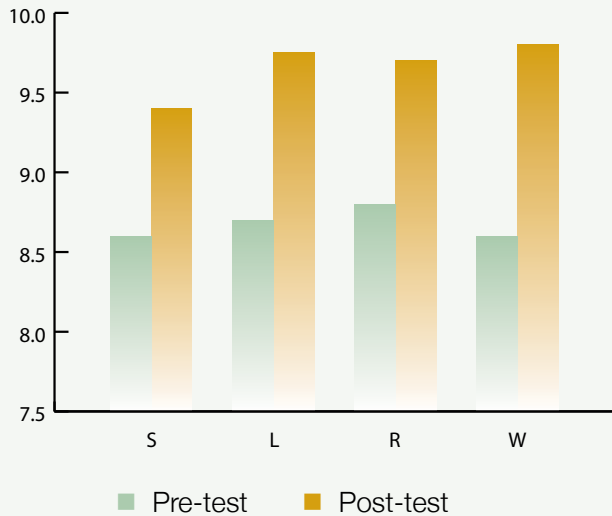
**FIGURE 5: Pre-Post Estimates by Practicum Physicians on Understanding of the Canadian Medical System**



A detailed 14 item ITERs was also used to provide a fine grained assessment of medical knowledge, professionalism, clinical skills, professional communication and language proficiency. The results were statistically analysed for significance ( $p < .001$ ), reliability (Cronbach's alpha, 0.93), and magnitude of reported change (Cohen's  $d$ , +/- .60). With few exceptions, the M-CAP participants met or surpassed their practicum supervisors' expectations for the demonstration of adequate practice in each of the discreet categories and registered large improvements in medical knowledge, clinical judgment, professional communication and professional interaction.

## MEASURED GAINS IN PROFESSIONAL LANGUAGE PROFICIENCY

**FIGURE 6: Benchmark on Pre and Post-Test**

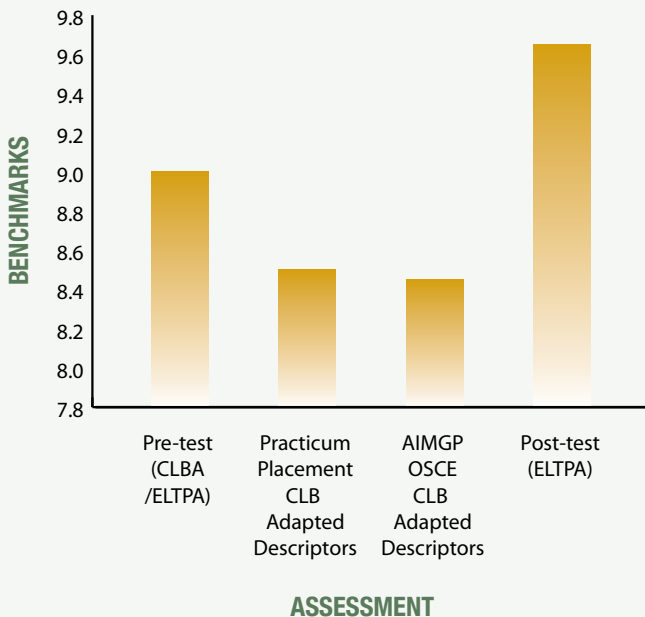


Four language assessment measures were used in order to understand the development of professional language proficiency and its interpretation in various professional contexts. The CLBA and ELTPA were administered by certified language assessors at the start and end of the program. The ITERs and AIMG OSCE language assessments were administered by physician examiners in practice and examination settings. The language assessment gains on the pre-test and post-test are presented in Figure 6.

**The average gain in Speaking was 0.61 benchmarks, Listening was 0.61, Reading was 0.51, and Writing was 0.85. All of these effects are large.**

The gains represent an accelerated rate of language acquisition compared to expected gains calculated for a similar population of professional learners in language instruction programs (Watt & Lake, 2004). The present results were statistically analyzed for significance ( $p < .001$ ) confidence of replication (confidence interval = 95%) and magnitude of change (Cohen's  $d \pm 1.0$ ). The findings indicate a high magnitude of change and strong evidence that the instructional approach will replicate the results with any similar future group of participants.

**FIGURE 7: Listening and Speaking**



The assessment of professional language proficiency across all four contexts is represented in Figure 7. The assessment by physicians in medical contexts demonstrates the relationship between real clinic settings and exam conditions.

## ■ OSCE PERFORMANCE RESULTS

In order to understand the impact of M-CAP on the OSCE performance and its evaluation criteria, four questions were addressed:

1. How do M-CAP and non M-CAP groups perform in terms of their overall OSCE success?
2. How do the two groups compare in terms of their communication and language assessments in the OSCE?
3. How do the two groups compare in terms of their clinical performance across the OSCE stations?
4. What impact does M-CAP have on the OSCE performances of those who have taken the exam before and after M-CAP?

M-CAP participants outperformed other IMGs in terms of their success rate on passing the AIMG OSCE. M-CAP participants had a 63.6% pass rate, whereas non-M-CAP participants registered a 32.8% pass rate.

M-CAP participants performed equally well on all language proficiency measures on the AIMG OSCE, and outperformed other IMGs on the Communication checklist ( $p < .05$ )

In terms of the assessment of clinical skills as measured at each individual station of the AIMG OSCE, M-CAP participants marginally outperformed all other IMGs on all ten stations and there was a statistically significant difference in performance on three of ten stations. Also, M-CAP participants passed more stations (6.13 stations) than all other IMGs (4.43 stations) demonstrating a statistically significant difference ( $p < .05$ ) in their performance. The AIMG pass criterion is set at six stations.

The results of the first three questions regarding AIMG OSCE performance to the comparison group of all other AIMG OSCE candidates clearly demonstrate the positive impact of the M-CAP program on participant performance. In order to respond to the last question, results for 18 M-CAP participants who had taken the AIMG OSCE prior to M-CAP were compared with their results after M-CAP. These are represented in Table 2. Again, a statistical magnitude of change was calculated for all measures and gains in both clinical skills (Cohen's  $d = 1.33$ ) and communication (Cohen's  $d = 1.26$ ) were deemed to be very large. The magnitude of the change provides comparative evidence of the impact of the M-CAP program on the participants' performance.

**TABLE 1: OSCE results before and after M-CAP Program (n=18)**

Skill Area	Before M-CAP	After M-CAP	†Pooled SD	Percent Gained	Effect Size Cohen's d
Overall	66.71	71.84	3.86	5.13*	1.33 <sup>b</sup>
Clinical	65.21	69.14	3.72	3.93*	1.06 <sup>b</sup>
Communication	26.32	29.87	2.81	11.10**	1.26 <sup>a</sup>
Language	70.34	75.39	6.12	5.05*	0.83 <sup>c</sup>

†pooled standard deviation, \* $p < .05$ ; \*\* $p < .01$ , <sup>a</sup> extremely large, <sup>b</sup> very large, <sup>c</sup> moderate <sup>d</sup> small



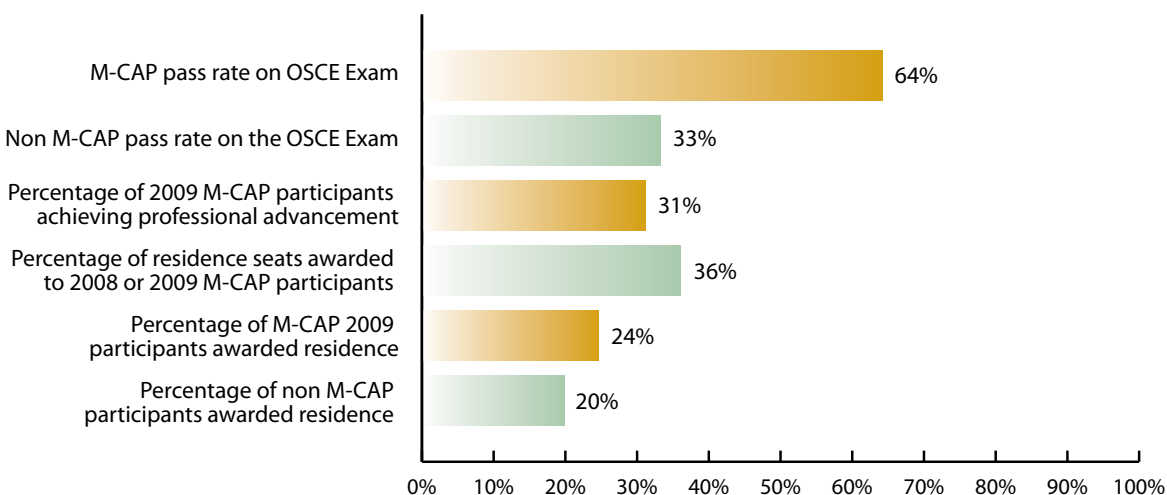
## ■ CONCRETE RESULTS OF PROFESSIONAL INTEGRATION

Advancement along the path of professional integration is becoming increasingly competitive, despite the increase in the number of available residence positions. In 2009, there were 42 residence positions allocated specifically for IMGs in Alberta. From the initial 189 applicants to the OSCE, 79 were eligible to compete for the residence positions. In the previous year, 148 successful OSCE candidates from the 235 applicants were eligible for the then 57 residency positions.

While this reality in the professional integration process highlights the bottleneck that presently exists in the medical system, it also helps to contextualize the magnitude of the achievements made by participants in the M-CAP program. Of the 42 residency positions available, M-CAP participants in 2009 successfully attained 13 of the positions, representing a 30.9% rate of success for 2009 M-CAP graduates. These results are compared to the success rates of the non-M-CAP sample that filled 29 of the 42 positions for a 69.1% success rate in accessing residence. Interestingly, this is the converse of the M-CAP participants outperforming other IMGs in their success rate on passing the AIMG OSCE. M-CAP participants had a 63.6% pass rate, whereas non-M-CAP participants registered a 32.8% pass rate.

The concrete results of professional integration are summarized graphically in Figure 8.

**FIGURE 8: Concrete Results of Professional Integration**



## ■ CONCLUSION

The M-CAP participants have demonstrated substantial gains in terms of professional language proficiency, medical communication and their capacity to successfully demonstrate clinical skills. They have also demonstrated increased confidence in their own readiness for Canadian medical practice and have been similarly assessed by practicum physicians who worked closely with them over an eight week period. These gains are evidenced concretely in the number of participants who were able to obtain residence positions, who were awarded Part V licenses or who were awarded C-CAP positions, as well as by the number who successfully completed the MCCQE-2 examination. A further statistical exploration of the participant performances on the array of assessment variables underscores the important gains made in each area and the effect sizes of the measurable change in both professional language proficiency professional communication and clinical skills. With its focus on professional language and communication in a performance based approach to instruction the program was able to generate a 95% confidence interval, suggesting that the results and cross comparisons are highly replicable with any similarly selected audience of IMG's.





## **Medical Communication Assessment Project**

G222 Health Sciences Centre  
3330 Hospital Drive NW  
Calgary, AB, T2N 4N1

Phone: 403-210-7640  
Fax: 403-210-6830  
E-mail: [mcap@ucalgary.ca](mailto:mcap@ucalgary.ca)  
Website: [www.m-cap.ca](http://www.m-cap.ca)

### **Dr. David Watt**

Co-creator & Co-investigator  
Associate Professor  
Faculty of Education  
University of Calgary

### **Dr. Claudio Violato**

Medical Education &  
Research Unit  
Faculty of Medicine  
University of Calgary

### **Deidre Lake**

Co-creator & Co-investigator  
MCAP & IMG Study Director  
University of Calgary

M-CAP HAS BEEN FUNDED BY ALBERTA EMPLOYMENT &  
IMMIGRATION AND CITIZENSHIP & IMMIGRATION CANADA

