M-CAP PUBLIC REPORT

BACKGROUND

The aim of the M-CAP program is to prepare recent immigrant physicians, referred to as Alberta International Medical Graduates (AIMG) to meet the communication and language requirements associated with Canadian medical practice. The program accelerates the rate at which AIMG's 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 AIMG's professional language proficiency, they are better able to demonstrate the scope of their clinical medical skills. This which in turn would result in greater success in moving forward to medical residence positions and then on to medical practice.

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

THE AIMG PARTICIPANTS

From 94 eligible applicants residing in Alberta, 60 participants were selected based on their successful completion of:

- The required medical knowledge exams – the Medical Council of Canada Evaluating Exam and the subsequent MCCQE1 exam.
- Their previous experience
- Their level of English language proficiency (CLBA L/S 7, R 7, W 7 or higher)

The participants represented 22 countries of origin and 19 first languages. All were Alberta residents, holding either landed immigrant (66%) or Canadian citizenship (34%) status. They were on average 38 years of age, and had lived in Canada for about 5.8 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.

Twenty two of the participants had taken the AIMG OSCE in a previous year and 15 had passed the exam but had 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) program for qualified immigrant IMG's in both Calgary and Edmonton.

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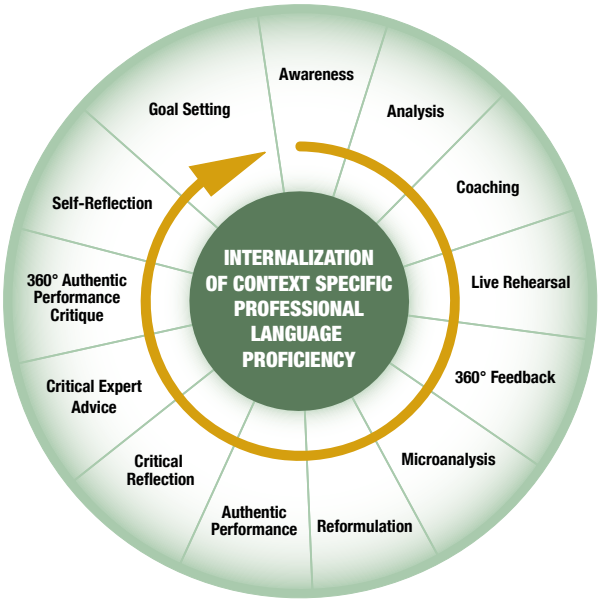
2. To develop strong ties to the profession by locating the program in the faculties of Medicine at the University of Calgary and the University of Alberta, by creating linkages with the Alberta Medical Association and the College of Physicians and Surgeons of Alberta, and by involving doctors for assessment, 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/ELTPA), or experienced physicians in professional settings (ITERS/ OSCE).
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 1.1 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 1.1: Internalization of Context Specific Professional Language Proficiency



■ 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

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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 1.2 and 1.3 provide evidence of the participants' perceptions of the outcomes of the involvement in the M-CAP program.

The participants' perceptions of the rate and amount of gains are validated by the other measured gains and the concrete outcomes of professional integration.

FIGURE 1.2: Perceived improvement in Professional Language proficiency for medical practice

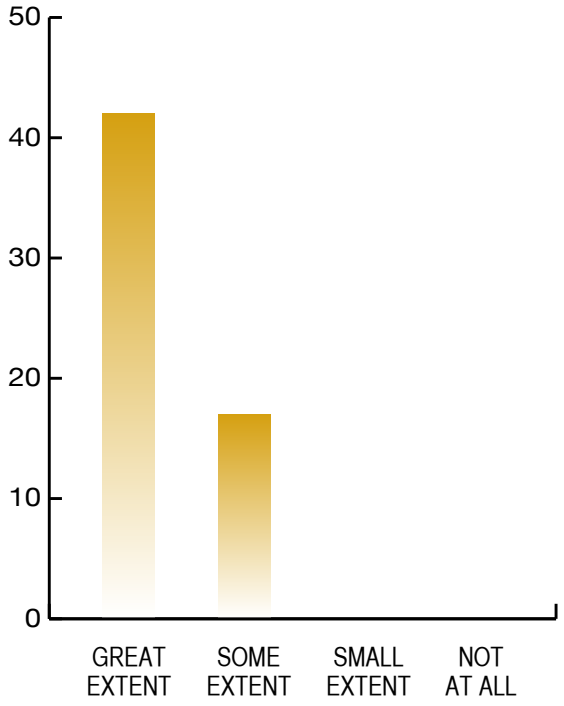
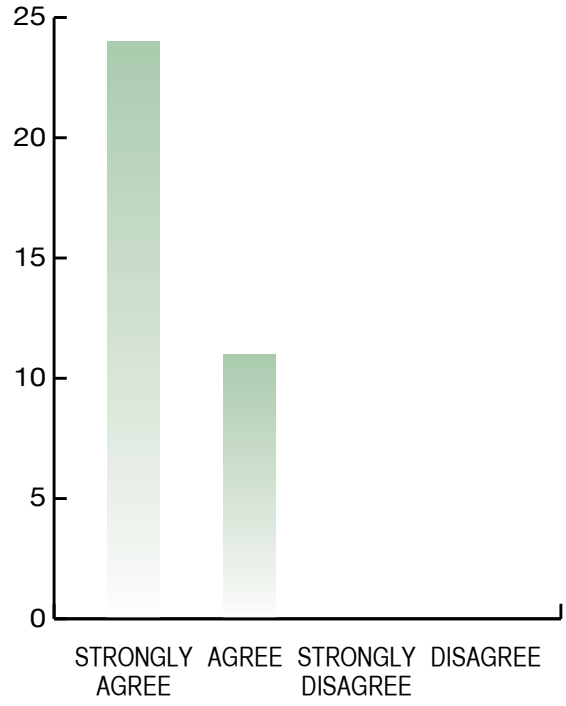


FIGURE 1.3: Did your language proficiency develop faster in this style of instruction than in your previous experience?



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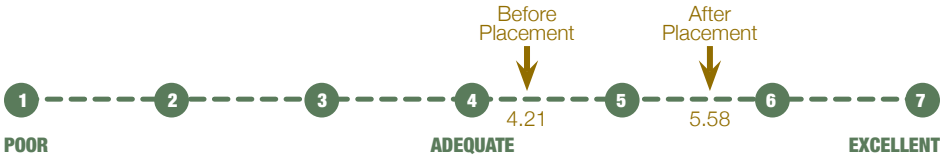
■ PRACTICUM PHYSICIAN ASSESSMENT

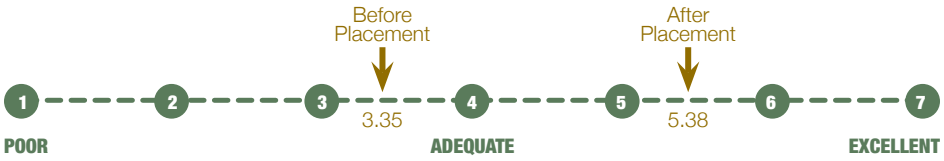
Practicum physicians were asked to evaluate the M-CAP participants' readiness for Canadian medical practice at the start and the end of the eight week placement, in terms of two variables: their familiarity with the Canadian Medical system and their professional language proficiency for medical practice. 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 1.4: Pre-Post Estimates by Practicum Physicians of Professional Language Proficiency



Estimated gain = 31.7%

FIGURE 1.5: Pre-Post Estimates by Practicum Physicians on Understanding of the Canadian Medical System



Estimated gain = 36.3%

A detailed 14 point 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, 0.94), and magnitude of reported change (Cohen's d, +/- .6). 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. The gains made on these two scales suggest that there is a continued improvement in professional communication, during the 8 week practicum placement.

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FIGURE 1.6: Benchmark on Entry (CLBA) and End (ELTPA)

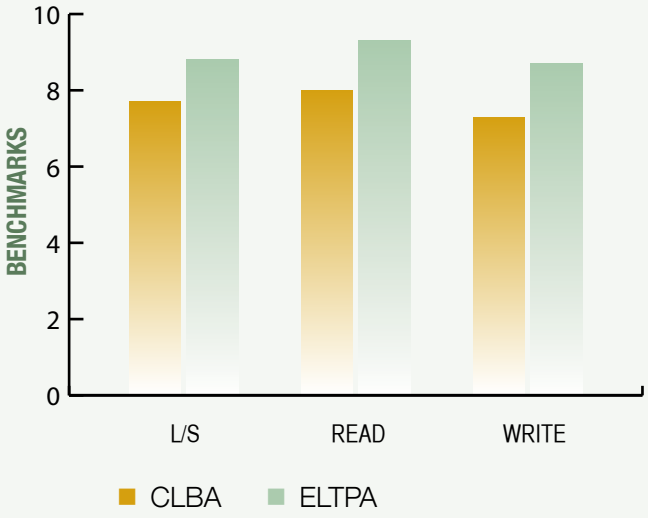
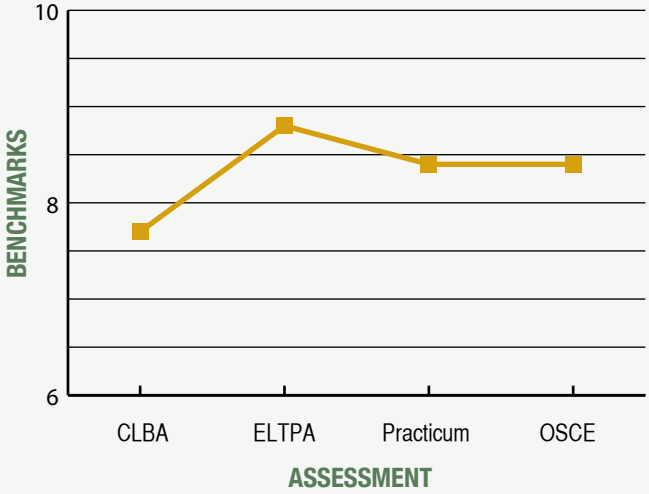


FIGURE 1.7: Listening and Speaking



MEASURED GAINS IN PROFESSIONAL LANGUAGE PROFICIENCY

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 CLBA and ELTPA are presented in Figure 1.6.

The average gain in Listening/Speaking was 1.15 benchmarks. The average gain in Reading was 1.37 benchmarks, and the average gain in Writing was 1.33 benchmarks.

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 +/- 2.0). The findings indicate an extremely high magnitude of change and strong evidence that the instructional approach will replicate the results with any similar future group of participants.

The assessment of professional language proficiency across all four contexts is represented in Figure 1.7. The assessment by physicians in medical contexts demonstrates the relationship between performance in real clinical settings and exam conditions. The gains provide strong evidence that the M-CAP program had a significant impact on the development of professional language proficiency.

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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 68% pass rate, whereas non-M-CAP participants registered a 61.7% 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 (, $p < .05$ one-sided)

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 (6.53 stations) than all other IMGs (5.98 stations) demonstrating a statistically significant difference (* $p < .05$ for a one-tailed test) in their performance. The AIMG pass criterion is set at six stations.

The results of the first three questions regarding AIMG OSCE performance in comparison with 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 21 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 1.1. Again, a statistical magnitude of change was calculated for all measures and gains in both clinical skills (Cohen's d = 1.06) and communication (Cohen's d = 2.03) were deemed to be very large and extremely large respectively. The magnitude of the change provides comparative evidence of the impact of the M-CAP program on the participants' performance.

TABLE 1.1: OSCE results before and after M-CAP Program (n=21)

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 [b]
Clinical	65.21	69.14	3.72	3.93*	1.06 [b]
Communication	69.41	80.45	5.43	11.04**	2.03 [a]
Language	70.34	75.39	6.12	5.05*	0.83 [c]
Writing	85.12	87.67	6.34	2.55	0.40 [d]

†pooled standard deviation, *p<.05; **p<.01, [a] extremely large, [b] very large, [c] moderate [d] small

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CONCRETE RESULTS OF PROFESSIONAL INTEGRATION

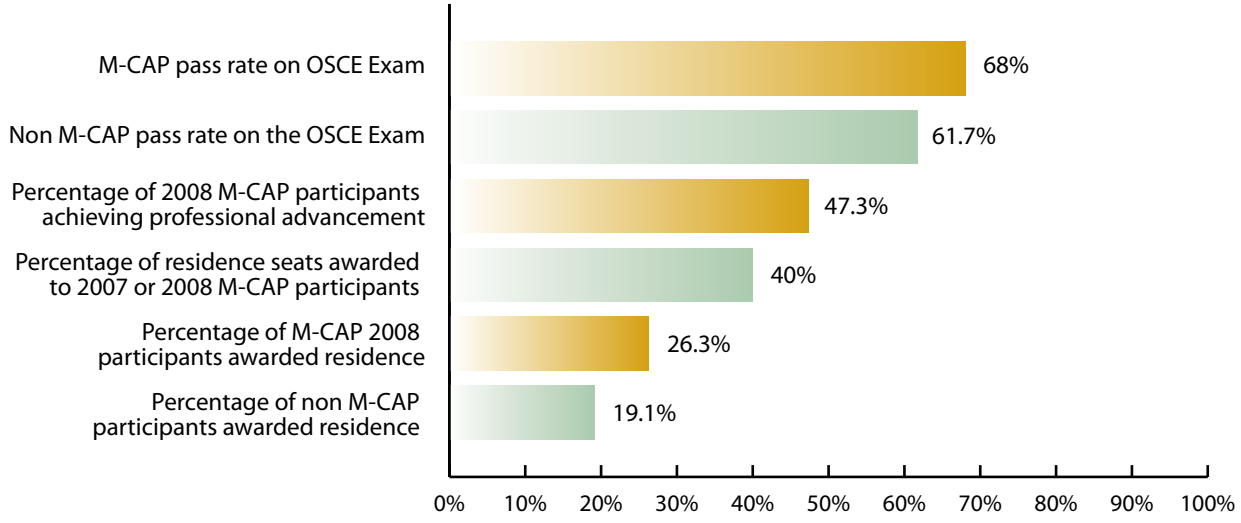
Advancement along the path of professional integration is becoming increasingly competitive, despite the increase in the number of available residence positions. In 2008, there were 57 residence positions allocated specifically for IMGs in Alberta. From the initial 235 applicants to the OSCE, 148 passed and therefore were eligible to compete for the residence positions. In the previous year, only 82 successful OSCE candidates from the 196 applicants were eligible for the then 48 residency positions. This represents a 33% increase in the competitive process for available residence positions in 2008.

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 57 residency positions available, M-CAP participants in 2008 successfully attained 15 of the positions, representing a 26.3% rate of success for 2008 M-CAP graduates. A further 8 residence positions in the present year were attained by M-CAP graduates from 2007, who had not been selected in their previous year. In total, 23 of the 57 available residence positions were claimed by M-CAP graduates in 2008, representing 40% of the positions in this year. These results compare favourably to the success rates of the non-M-CAP population who filled 34 of the 57 positions for a 19.1% success rate in accessing residence.

The combination of access to Residence positions, Part V licensure and Clinical Assistant positions are positive evidence of professional integration. In total 27 of the 57 M-CAP participants in 2008 achieved on of the three categories, representing an overall success rate of 47.3% for these three measures.

The concrete results of professional integration are summarized graphically in Figure 1.8.

FIGURE 1.8: Concrete Results of Professional Integration



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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 measureable 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 for the reported gains, 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
Website: www.m-cap.ca

Dr. David Watt
Co-creator
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
Program Manager
University of Calgary

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