

Implementation and evaluation of “I-Guide,” a pilot near-peer Internal Medicine mentorship program

Mise en œuvre et évaluation de « I-Guide », un programme pilote de mentorat par les quasi-pairs en médecine interne

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Implication Statement

An Internal Medicine (IM) specific, near-peer mentorship program was initiated at the University of Ottawa (uOttawa) in 2017. Medical students were paired with IM resident mentors to improve career decision-making through student-oriented discussion topics. Program evaluation was completed using data from three participant cohorts and showed that the program had a positive impact on students' career decision-making. Given the program's flexible nature and ease of implementation, it is well suited for adaptation at other institutions.

Énoncé des implications de la recherche

Un programme de mentorat par les quasi-pairs spécifique à la médecine interne (MI), a été lancé à l'Université d'Ottawa en 2017. Les étudiants en médecine ont été jumelés avec des mentors résidents en MI afin d'aider les premiers à prendre des décisions concernant leur carrière par le biais de discussions sur des sujets d'intérêt pour eux. L'évaluation du programme, réalisée sur la base des données de trois cohortes de participants, a montré qu'il a eu un impact positif sur la prise de décisions des étudiants à propos de leur carrière. Étant donné la nature souple du programme et sa mise en œuvre facile, il peut être adapté sans difficulté au contexte d'autres établissements.

Background

According to the Canadian Resident Matching Service, Internal Medicine residency positions have higher availability compared to demand from applicants.¹ We aimed to increase medical student interest in IM at our institution through the development of a novel near-peer mentorship program between residents and medical students. For mentees, benefits of mentorship include career counselling, earlier exposure to various specialties, increased research productivity, and improved well-being, ultimately leading to better chances of matching to students' specialty of choice.² Many medical students make decisions regarding residency programs during pre-

clerkship and mentors positively facilitate students' ability to make career decisions.³ Resident mentors have the benefit of being closer in age to students and are more approachable than staff mentors.⁴ In a cross-sectional survey of medical students at one university, residents were highly valued as near-peer role models in undergraduate medical education.⁵

Previous mentorship programs in Surgery demonstrate that effective mentorship can increase student interest in a specialty.⁶ We developed and evaluated a novel IM mentorship program tailored to medical students to increase medical student interest in the specialty.

Innovation

We designed and coordinated a resident-to-student mentorship program specifically tailored towards a career in IM at uOttawa called “I-Guide.” I-Guide is a one-on-one mentoring experience where a second-year medical student (mentee) is paired with a first- or second-year IM resident (near-peer mentor). The program was open to second-year medical students only due to limited availability of volunteer IM mentors. Second-year medical students were randomly selected from those who completed applications to create a one-to-one match with the number of resident applications received, using subspecialty interest where possible. I-Guide runs for a full academic year and involves a combination of formal group sessions (an orientation session and a case-based resident-led teaching session) and individually-arranged meetings between student-resident pairs. Discussion topics were provided for one-on-one meetings, some of which included: clerkship track selection, research opportunities, and advice for transition to clerkship. The program has run for three cycles and ranged from 20-29 pairings each year.

Evaluation

We emailed anonymous and voluntary online questionnaires to the student mentees. We compared students’ interest in IM as a first-choice career before and after participating in I-Guide using two-tailed, independent and dependent sample T-tests, and students’ perceptions on IM lifestyle and job opportunities, and perceived impact of the I-Guide program on career decision-making. This project was exempt from ethics review by the Ottawa Health Science Network Research Ethics Board.

Seventy-two students participated in an average of 1.62 meetings with their mentor between 2017-2020. A total of 44 (61.1%) responses to the pre-program survey, and 26 (36.1%) responses to the post-program evaluation were collected. The average ranking of internal medicine being the students’ first-choice career on a scale of 1-10 (where 1 = absolutely ruled out IM, and 10 = absolutely decided on IM) after program completion was 7.2 (SD = 3.4) compared to before starting the program 6.6 (SD = 3.5), $t(24) = -2.98$, $p = 0.007$. When students were asked to rate their perceptions of an IM career on a 5-point Likert scale (1 = strongly dislike; 3 = indifferent; 5 = strongly liked), there were no significant changes in perception of job opportunity (Likert scale pre = 3.8/5 vs post = 3.8/5) or impression of IM lifestyle (Likert scale pre = 3.6/5 vs. post 3.2/5). Eight students (30.8%) felt I-Guide had an impact on

their career decision-making and 96.1% ($n = 25$) would recommend the I-Guide program to others. (Table 1).

Table 1. Pre- and post-program questionnaire results

Descriptors	Pre-Program <i>n</i> (%)	Post-Program <i>n</i> (%)	Mean (SD) Pre	Mean (SD) Post
How much of an impact do you feel the I-Guide program had on your career decision-making either towards or away from internal medicine?				
1 (Absolutely no impact)		1 (3.8)		
2		4 (15.3)		
3		13 (50)		
4		8 (30.8)		
5 (Significant impact)		0 (0)		
What is the likelihood of internal medicine being your first choice career on a scale of 1-10?				
1 (Completely ruled out)	0 (0)	0 (0)		
2	0 (0)	0 (0)		
3	1 (4)	1 (4)		
4	1 (4)	1 (4)		
5 (Considering)	8 (32)	3 (12)		
6	1 (4)	3 (12)		
7	6 (24)	4 (16)		
8	4 (16)	6 (24)		
9	2 (8)	5 (8)	6.6	7.2
10 (Absolutely decided)	2 (8)	2 (8)	(1.87)	(1.85)
Recommend Program to others interested in internal medicine (/5)				
Strongly Disagree		0 (0)		
Disagree		1 (3.8)		
Neutral		0 (0)		
Agree		9 (34.6)		4.5
Strongly Agree		16 (61.5)		(0.71)
What was your opinion of internal medicine before/after I-Guide in terms of:				
Lifestyle				
Strongly Dislike	0 (0)	0 (0)		
Dislike	5 (11)	6 (23)		
Indifferent	12 (27)	9 (35)		
Liked	21 (48)	10 (38)	3.6	3.2
Strongly Liked	6 (14)	1 (4)	(0.87)	(0.86)
Job opportunity				
Strongly Dislike	0 (0)	0 (0)		
Dislike	1 (2)	0 (0)		
Indifferent	15 (34)	8 (31)		
Liked	20 (45)	15 (58)	3.8	3.8
Strongly Liked	8 (18)	3 (12)	(0.76)	(0.63)

Next steps

The I-Guide program was successful at increasing medical student interest in IM, and influenced the career decision-making of some participants. I-Guide can be easily adapted for implementation across other Canadian medical institutions to both increase medical student interest and mentorship in IM.

Limitations of the evaluation included the use of *ad hoc* surveys as opposed to a validated scale. Additionally,

external factors and learning experiences could have contributed to a change in students' perceptions of IM over the course of the program. Next steps include emphasizing the importance of self-arranged meetings between pairs utilizing virtual platforms, increased participant accountability to meet a minimum number of meetings, evaluation of reasons why meetings may be missed, and longitudinal follow-up of I-Guide participants to assess the effect of their mentoring relationship on residency career decisions.

Conflicts of Interest: The authors wish to disclose that the primary author (H.M.) was the founder of the I-Guide Program. I-Guide was founded as part of a Fourth-Year Medical Student Leadership Elective under the supervision of author (K.K.) The authors also wish to disclose that some supporting authors (K.Z., L.S., and K.E.) had the opportunity to participate in I-Guide as mentees and later joined the executive team. Authors S.E., S.R., and G.M. are current/former executive team members.

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References

1. Clark M, Shah S, Kolla L, Marshall S, Bryson S, Nair B. Post-CaRMS match survey for fourth year medical students. *Can Med Ed J.* 2020;11(3): e101–e110. <https://doi.org/10.36834/cmej.69330>
2. Frei E, Stamm M, Buddeberg-fischer B. Mentoring programs for medical students--a review of the PubMed literature 2000-2008. *BMC Med Educ.* 2010; 10:32. <https://doi.org/10.1186/1472-6920-10-32>
3. Sud S, Wong, JP, Premji, L, Punnett, A. Career decision making in undergraduate medical education. *Can Med Ed J.* 2020. <https://doi.org/10.36834/cmej.69220>
4. Bod J, Tsyrlunik A, Coughlin R, Della-Giustina D, Goldflam K, Wright. Successful implementation of a resident liaison to medical students in emergency medicine rotations. *Acad Emerg Med.* 2020;4(1):68-71 <https://doi.org/10.1002/aet2.10398>
5. Sternszus R, Cruess S, Cruess R, Young M, Steinert Y. Residents as role models: impact on undergraduate trainees. *Acad Med.* 2012;87(9):1282-7. <https://doi.org/10.1097/ACM.0b013e3182624c53>
6. Nguyen SQ, Divino CM. Surgical residents as medical student mentors. *Am. J. Surg.* 2007;193(1):90-3. <https://doi.org/10.1016/j.amjsurg.2006.07.011>