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Introduction

Canada's healthcare system is enriched by the contributions of IMGs,¹ who bring diverse medical expertise and experiences to the country. IMGs entering niche specialties with small residency programs notably encounter distinctive challenges including clinical integration into the field. For me, entering a Medical Microbiology postgraduate training program, I was challenged to orient myself to understanding specific Canadian laboratory practices, and diagnostic protocols. Furthermore, limited residency spots available to IMGs at Canadian universities² can lead to underrepresentation in staff physician positions, creating a gap in mentorship and guidance.

This is the story of how I used ChatGPT,³ an Artificial Intelligence model facilitating natural language communication, to aid my transition during the initial months of my residency training in Medical Microbiology. It also underscores the importance of mentorship programs tailored for IMGs in such specialized fields.

Rationale for using ChatGPT?

Confronted with challenges as an IMG and the absence of extensive orientation programs for new residents in niche specialties; I identified three key objectives to aid my transition to the Canadian medical system:

- I. Acquiring general tips for success in Canada
- II. Gaining specific feedback on improving in my specialty
- III. Finding support when needed.

These issues prompted me to seek out a mentor, but because I was fairly new in residency and lacked the networks, I could not immediately get a mentor in Medical Microbiology. I was able to find a physician mentor in another area of practice who provided tips on thriving in the Canadian medical system. This led me to interact with ChatGPT for other potential solutions to aid my personal development.

ChatGPT recommendations for new residents without a mentor

ChatGPT emphasized the significance of mentorship programs⁴ in providing guidance and networking opportunities for IMGs in low enrolment specialties, to enhance learning. I also engaged ChatGPT to provide specialized orientation to Medical Microbiology as follows:

1. Specialty-Specific Questions: ChatGPT provided questions covering gram-positive and gram-negative bacteria, viral infections, and mycology, to name a few. It also ensured testing of practical aspects like infection control and antimicrobial stewardship and analyzed rationales such as precautions used in disseminated versus localized Herpes Zoster.
 - a. ChatGPT prompt: "Generate 20 study questions in medical microbiology for a new **specialty** resident in Canada; explain what subtopics to focus on, the rationale, and tips to know for each question."
2. Clinical Scenario Analysis: The tool facilitated interactive learning through clinical scenarios, ensuring curriculum coverage and contextual learning within the specialty, such as with the use of diagnostics for severe pneumonia and algorithms for fever of unknown origin.
 - a. ChatGPT prompt: "Generate 20 specific questions each with analyses, clinical scenarios and their rationale, and provide answers with clinical reasoning that can help a new microbiology resident to enhance understanding."
3. Laboratory Diagnostic Methods: The model provided current insights and approaches on molecular diagnostic tools such as Polymerase Chain Reaction (PCR), Matrix Assisted Laser Desorption Ionization-Time of Flight Mass Spectrometry (MALDI-TOF MS), while providing PubMed links.
 - a. ChatGPT prompt: "Explore relevant and new molecular diagnostic tools and technologies that a specialty resident should be familiar with. Please indicate clinical rationale and provide resources for further reading."
4. Personalized Study Guide: ChatGPT designed a structured study guide for concentrated learning.
 - a. ChatGPT prompt: "Design a 2-week study session plan for a resident in the Specialty, focusing on 2-hour day sessions, providing guidance on specific areas to focus on, and tips."

Impact of ChatGPT's recommendations

ChatGPT's ability to provide rapid information proved helpful for quick access to relevant information. This will be particularly useful for residents without access to mentors who need rapid answers to questions. Its specialized advice for Medical Microbiology has also been invaluable in my training, assisting in building my knowledge base towards exams and in accessing key resources for future use.

Limitations of ChatGPT

While ChatGPT is a powerful tool for information retrieval and learning, it is not a substitute for the nuanced understanding and experience that human mentors provide. The model's limitations include an inability to interpret non-verbal cues and the potential for misinformation, necessitating that learners also use it as a supplementary resource rather than a standalone solution. The results from ChatGPT are also user dependent; following user generated specific requests and prompts.

Conclusion

Mentorship for IMGs in specialized, low enrolment fields is vital for successful integration and enhanced learning. For residents lacking direct mentorship, ChatGPT emerges as a valuable additional tool, offering recommendations for learning, collaboration, exam preparation and for staying abreast of new trends in their specialties.⁵

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