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A non-hierarchical mentorship model for professional development

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Introduction: Mentorship is an essential component of professional development and benefits include increased career satisfaction, scholarship, and efficiency of academic promotion. The Mastermind group, a collaborative, network-based model for mentorship has gained popularity in the business world. It comprises of a group of colleagues that provide mentorship and career advice for each other through regularly scheduled meetings. The group benefits from the combined intelligence and accumulated experience of the participants, who may be at different career stages. **Methods:** Academic Life in Emergency Medicine (ALiEM; www.aliem.com), a digital health professions education organization, conducted two Mastermind groups for 14 team members in 2017. The groups included all levels of academic rank from full professor to instructors, and represented 14 different medical schools in North America. Each Mastermind group completed a self-assessment summarizing their professional strengths and weaknesses, two homework assignments, and two 90-minute videoconference meetings, using a structured, moderator-facilitated format. Meetings were conducted on Google Hangouts on Air© (Google Inc.). In the initial group meeting, participants discussed their self-assessments, current projects, and career challenges. The second meeting allowed discussion of suggested professional development resources for each participant, actionable next steps, and an accountability timeline for each participant. The free, cloud-based platforms and voluntary basis for the Mastermind groups resulted in a zero-cost innovation. **Results:** In a post-intervention survey, the 14 participants rated the experience as 9.4/10 (response rate 100%) using a Likert scale. In a quasi-experimental analysis participants cited the need for career advice or assistance with a project as their reason for participating. Participants received specific resource recommendations during the sessions, including books, training courses, or conferences. Contacts outside the group for additional mentorship were made possible given the breadth of networks among the participants. All participants had at least one identifiable next step with accountability to the group. Overall, the participants described a synergy of energy, commitment to one another's longitudinal success, and benefit from the diverse range of talent and expertise in the group. Many of the members discussed plans to replicate this mentorship model at their own institutions. **Conclusion:** Our experiences suggest that the Mastermind conceptual framework is an easily replicated, feasible, zero-cost, and effective model for professional development. Though the model was originally proposed as a method for in-person discussions, we report a more modern, online experience for professional development in our diverse, globally-distributed team.

Keywords: innovations in emergency medicine education, mentorship, professional development

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The chief resident incubator - a virtual community of practice

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Introduction: The Emergency Medicine Chief Resident Incubator is a year-long curriculum for chief residents that aims to provide participants with a virtual community of practice, formal administrative training, mentorship, and opportunities for scholarship. **Methods:** The Chief Resident Incubator was designed by Academic Life in Emergency Medicine

(ALiEM; www.aliem.com) a digital health professions education organization in 2015, following a needs assessment in emergency medicine. A 12-month curriculum was created using constructivist social learning theory, with specific learning objectives that reflected 11 key administrative or professional development domains deemed important to chief residents. The topics covered included interviewing skills, contract negotiations, leadership, coaching, branding, conflict resolution, and ended with a focus on wellness and career longevity. A Core Leadership Team and Virtual Mentors were recruited to lead each annual iteration of the curriculum. The Incubator was implemented as a virtual community of practice using Slack©, a messaging and digital communication platform. Ancillary technology such as Google Hangout on Air© and Mailchimp© were used to facilitate learner engagement with the curriculum. Three in person networking events were hosted at three large emergency medicine and education conferences with special medical education guests. Outcomes include chief resident participation rates, Slack© activity, Google Hangout© web analytics, newsletter email engagement, and scholarship. We also incorporated a hidden curriculum throughout the year with multiple online publications, competitions for guest grand round presentations, and incorporation of digital technologies in medical education. **Results:** A total of 584 chief residents have participated over the first 3 years of the Chief Resident Incubator; this includes chief residents from over 212 residency programs across North America. Over 27,000 messages have been shared on Slack© (median 214 per week). A total of 32 Google Hangouts© have occurred over the course of the inaugural Incubator including faculty mentorship from Dr. Rob Rogers, Dr. Dara Kass and Dr. Amal Mattu. A monthly newsletter was distributed to the participants with an opening rate of 59%. Scholarship included 26 published academic blog posts, 2 open access In-Training exam prepbooks, a senior level online curriculum with 9 published modules and 3 book club reviews. **Conclusion:** The Chief Resident Incubator is a virtual community of practice that provides longitudinal training and mentorship for chief residents. This Incubator framework may be used to design similar professional development curricula across various health professions using an online digital platform. **Keywords:** innovations in emergency medicine education, chief residents, mentorship

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The Spot the Diagnosis! series: using fine art to teach observation skills and medical concepts on a medical education website

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Introduction: Fine art education increases the quality and quantity of observations that medical students make in both art and clinical reports. However, there are few free and accessible resources that teach art and observational skills to healthcare learners and providers. CanadiEM.org, a medical education blog, developed a new series called Spot the Diagnosis! to address this gap. The goals of the Spot the Diagnosis! series are to: 1) use art to explain medical concepts, 2) tie medical concepts to visual art, 3) hone observational skills, and 4) expose healthcare providers to art. **Methods:** Each piece of art for the Spot the Diagnosis! Series is selected based upon the author's art history knowledge, resources found using an online search, and/or suggestions made by other healthcare professionals. The accompanying blog post is researched and written by a medical student in a question-and-answer style and peer-reviewed by another medical student and physician. Posts are uploaded monthly to CanadiEM.org and accessible to anyone with an internet connection. Promotion occurs on site, via email, word-of-mouth, and social media. Viewership is tracked using Google Analytics (GA). A survey for readers is planned to assess who, how, and why

readers use the series, but results were not available prior to abstract submission. **Results:** Six Spot the Diagnosis! posts have been published, each of which begins with the selection of a piece of fine arts that showcases a potential medical diagnosis and a blog post outlining an interpretation of the work informed by observations, historical reports, and medical evidence. Each was published as a blog post on a Saturday and added to a page containing a list of all posts in the broader Arts PRN section on CanadiEM. All contained a single piece of art as the focus, 6 ± 2 (median \pm IQR) questions, 638 ± 250 words, and 6 ± 3 references. The answers to questions are hidden under drop-down formatting to allow viewers to arrive at their own answers first. In the first 30 days of publication, each post in the series was viewed 1582 ± 401 times. **Conclusion:** The Spot the Diagnosis! series is an online educational resource published on CanadiEM.org that aims to improve learners medical knowledge and observational skills by featuring fine arts pieces with relevant question-and-answer style posts. This series fills the gap between art and medicine and has been well received by CanadiEM viewers. We look forward to analyzing responses in our survey to further understand how, why, and who uses this new and innovative resource.

Keywords: innovations in emergency medicine education, arts in medicine, observation skills

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Critical dynamics study of burnout in emergency department health professionals in New Brunswick: revisiting 6 years later

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Introduction: Emergency Department (ED) staff burnout correlates with psychological coping strategies used by Emergency department

health professionals (EDHPs). Staff at two urban referral EDs in New Brunswick took part in a survey of burnout and coping strategies after one ED experienced an influx of new physicians and a newly renovated ED in 2011. Six years later, ED crowding and EDHP staffing problems became prevalent at both EDs. We compared levels of burnout at two urban referral EDs to determine if burnout and coping worsened over time. **Methods:** An anonymous survey of all EDHPs at 2 urban referral EDs was performed in 2011 and in 2017. A demographics questionnaire, the Maslach Burnout Inventory (MBI, measuring emotional exhaustion, depersonalization and personal accomplishment), and the Coping Inventory for Stressful Situations (CISS, measuring task-oriented, emotion-oriented, and avoidance-oriented coping styles) were collected. Descriptive statistics and linear regression models examined relationships over time and between the two hospitals. **Results:** Burnout scores were similar both at the two facilities and in 2011 ($n = 153$) and 2017 ($n = 127$). There were no differences between samples or EDs for important factors. Emotion-oriented coping was associated with higher levels of burnout, while task-oriented coping was inversely correlated with burnout. Experiencing professional stress was a significant predictor of emotional exhaustion, while those working longer years in their current department had higher emotional exhaustion and depersonalization. By 2017, both EDs had experienced significant nursing staff turnover (50%) compared to 2011. **Conclusion:** Burnout scores remained consistent after 6 years at these two urban referral EDs. Given the evidence that increased years of service is associated with increased burnout, high staff turnover rate at both EDs could explain how scores remained constant. Staff turnover may represent a way these ED systems cope in a challenging environment. In 2017, task-oriented copers continued to score lower while emotionally-oriented copers showed higher burnout risk, and experiencing professional stress remains a strong predictor of burnout.

Keywords: burnout, emergency medicine, administration