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This Health Care Problem Needs a Collaborative Closing of the Gap

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physicians seeking certification are dependent on acceptance to other departments sponsoring designated emergency medicine spots, which are limited by philosophy, funding, and Accreditation Council for Graduate Medical Education resources. Moreover, a notable percentage of emergency physicians' interests favor early acute critical care versus the later aspects of intensive care. These different interests and needs should be recognized as opportunities to grow the specialties of both emergency medicine and critical care medicine.

The need to provide critical care in the ED is here. Expanding and standardizing resuscitation fellowships will help meet this demand. As more ED-ICU services are established⁵ to address critical care boarding, graduates of resuscitation fellowships will be ideal physicians to staff these models the critical care medicine and emergency physicians committed to ED-based critical care.

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This Health Care Problem Needs a Collaborative Closing of the Gap



In reply:

We appreciate the interest of Dr. Barnicle et al in our article "Critical Care Delivery Solutions in the Emergency Department: Evolving Models in Caring for ICU Boarders." This article provides an overview of the complexities related to delivering critical care in the emergency department (ED).

We disagree with the interpretation of our article as describing "new models" in which dual-boarded emergency and critical physicians are essential to success. Our article is intended to describe existing and evolving models of delivery of critical care in the ED

for patients who have disposition decisions but because of the complex nature of boarding and crowding remain in the ED. In fact, the section “Consideration for Implementation of Models of Delivery of Critical Care in the ED” outlines the importance of conducting local needs assessments, reviewing investments and resources required, and accounting for availability of a workforce to support the selected model before an institution adopts a delivery of critical care in the ED model.

The growth of the subspecialty of Emergency Medicine - Critical Care Medicine (EM-CCM) represents the remarkable tenacity of emergency medicine to recognize a problem and reach out to others in the house of medicine to provide a solution. Before the formalization of the initial board certification pathway between the American Board of Emergency Medicine and American Board of Internal Medicine in 2011, resuscitation fellowships trained emergency physicians with an interest in critical care. Henry Ford Hospital trained many such fellows dating back to the 1990s, who have made significant contributions to delivery of critical care. The hard work of these graduates paved the way for future dual-boarded EM-CCM physicians. The subspecialty is young and to date there are 346 American Board of Emergency Medicine–certified subspecialists in critical care medicine through internal medicine, anesthesiology, and critical care medicine.¹ This number has increased by 58 since the writing of our article and does not include the newly approved neurocritical care dual-training pathway. Dr. Barnicle et al highlight that resuscitation fellowships provide training to enhance the delivery of critical care in the first 12 to 24 hours. However, the dual-boarded EM-CCM physician possesses an additional skill set for delivery of longitudinal critical care. When applied in a timely manner, longitudinal critical care such as ventilator titration, transition to nonreceipt of insulin infusions in diabetic ketoacidosis, ensuring venous thromboembolism prophylaxis, and de-escalating antimicrobials, for example, has the potential to significantly affect a patient’s recovery from critical illness.^{2–4}

Finally, Dr. Barnicle et al make a point to state that resuscitation fellowships are an emergency medicine solution to an emergency medicine problem. The recently published joint task force article between the American College of Emergency Physicians (ACEP) and Society of Critical Care Medicine highlights that mitigation strategies include ED solutions, resuscitation care unit solutions, and hospital

solutions.⁵ We wholeheartedly disagree that this is an emergency medicine problem or that the response should be limited to an emergency medicine solution. It is a health care problem in which the solution is best delivered by an interspecialty approach acknowledging that critical care should have no borders. It is time the house of medicine knocked down its walls and worked together.

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Intravenous Haloperidol Versus Ondansetron for Cannabis Hyperemesis Syndrome (HaVOC): A Randomized, Controlled Trial



To the Editor:

We read with interest the article about the randomized controlled trial by Ruberto et al¹ comparing haloperidol with ondansetron in the management of cannabis hyperemesis syndrome. With mainly case reports and case series published on the topic, this study provides higher-quality evidence on haloperidol's effectiveness in improving symptoms in certain patients with suspected cannabis hyperemesis syndrome. However, we would like to note some limitations.

One of the main features of cannabis hyperemesis syndrome is resistance to traditional antiemetic therapy.² We thus question the external validity of this trial's inclusion criteria (2 hours of emesis from presentation) and exclusion criteria (patients receiving antiemetics other than 100 mg of dimenhydrinate). Intravenous ondansetron and metoclopramide are first-line antiemetics commonly used in the emergency department (ED), as evidenced by the high frequency of exclusions among screened individuals and slow study recruitment. We suspect that it may be difficult to replicate the observed benefit of haloperidol in this study in patients with severe symptoms, those who have received standard antiemetics, or those who have received multiple agents for breakthrough symptoms.

Akathisia and delayed dystonic reactions were observed in 1 of 13 and 2 of 13 patients in the haloperidol treatment group, with both patients with dystonia returning to the ED days later. We suspect that these harms would be compounded if haloperidol were given to patients who had already received metoclopramide or other antidopaminergic antiemetics. Did these patients receive dimenhydrinate? If so, this result would also highlight the ineffectiveness of early prophylactic antimuscarinic therapy in preventing delayed antipsychotic-induced dystonia, an all-too-common practice that defies basic pharmacokinetic sense.

Because the pathophysiology and optimal management of cannabis hyperemesis syndrome remain unclear, more basic research and larger clinical trials would be useful. The close to 90% attrition from screening to randomization and 70% loss to follow-up in this study illustrate what a challenging disease cannabis hyperemesis syndrome is to diagnose, treat, and track. It remains that this study is the highest-quality evidence available that establishes the superiority of haloperidol to ondansetron, but only in a limited subset of

moderately ill antiemetic-naïve patients. Clinicians must be cautious when applying these results to patients with severe symptoms, remain open-minded about concurrent antiemetic strategies, and stay vigilant about the stacked toxicity of therapies with similar mechanisms of action.

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In Reply:



We thank Moussa et al for their interest in our trial, and the opportunity to clarify its clinical implications. They posit a limitation on the generalizability of our findings, based on a mistaken inference regarding the exclusion of the most severely symptomatic patients from the trial. On the contrary, we enrolled only subjects with severe, ongoing and witnessed emesis, and excluded those with more moderate symptoms. As such, our findings apply specifically to patients most severely afflicted by true hyperemesis.