Growth in Recreational Cannabis Markets and Burden on Emergency Departments

Mark B. Mycyk, MD; Joanne C. Routsolias, RN, PharmD

Ever since Colorado legalized marijuana for recreational use in 2012, clinicians, researchers, and policy makers have used Colorado’s experience as an example of the consequences cannabis appears to have on the health care system. This study by Wang et al adds to the growing body of literature describing potential complications associated with cannabis and supports what frontline emergency care personnel have uncomfortably felt for several years: emergency department (ED) visits increase when cannabis is more readily available.

The investigators took advantage of a natural variation in exposure to recreational cannabis dispensaries across various jurisdictions in Colorado to evaluate whether vomiting episodes treated in the ED increased after legalization of cannabis. Although adverse effects due to cannabis have been recognized for decades, cannabinoid hyperemesis syndrome (CHS), a form of intractable cyclic vomiting associated with chronic and higher potency cannabis, has increased worldwide since first reported in 2004 and is one of the most frustrating cannabis problems to manage in busy EDs. Early data from 2 academic EDs in Colorado published shortly after legalization described an increase in their ED visits for CHS. In this study, Wang et al hypothesized that a similar increase would be noted in EDs across the entire state as new dispensaries opened. They used cannabis dispensary data from the Colorado Department of Revenue and ED claims involving vomiting from the Colorado Hospital Association and linked those vomiting claims to the location of dispensaries in the patient’s zip code address. As expected, after legalization, overall ED visits for vomiting increased by 29% over 5 years; most substantially, counties with new recreational dispensaries saw larger increases in both percentage and population-adjusted rates of ED vomiting visits.

The authors acknowledge their inability to confirm a direct link between legalization of cannabis and the sudden large increase in vomiting cases, but the data in this cleverly designed study are consistent with earlier smaller studies in Colorado and elsewhere. The conclusion in Wang et al that growth in new dispensaries was associated with an increase in vomiting cases treated in EDs makes sense—increasing availability of cannabis will naturally lead to increased complications. Their data are compelling and deserve thoughtful attention.

Treating patients with vomiting in the ED is fairly routine: most cases are self-limited when the cause is diagnosed and treated. However, the paradoxical cyclical vomiting associated with CHS is more challenging to diagnose because it does not affect all users of cannabis and, when confirmed, CHS is difficult to manage. These cases result in frequent laboratory testing, radiographic imaging, prolonged stays, and in some cases, hospital admission when the vomiting is intractable and unresponsive to conventional therapies administered in the ED. Many of these patients return to the same ED or present to another ED for the same problem and often undergo repeated and redundant testing. The severity of vomiting in CHS makes clinicians and nurses uncomfortable: their uncertainty that something other than cannabis is the underlying cause naturally leads to additional expensive diagnostic testing. Emergency departments are already stretched with increasing volumes and frequent boarding. Any increase in ED cases for vomiting affects the time to treatment and level of attention received by patients seeking ED care not related to a cannabis problem.

A few years ago, the County of San Diego Health and Human Services Agency, in collaboration with the San Diego Kaiser Permanente Division of Medical Toxicology, drafted evidence-based guidelines based on expert consensus to unite their regional ED community in anticipation of seeing a larger number of vomiting cases associated with cannabis use. Their goals were to raise awareness...
and standardize treatment: that type of approach, using the expertise of different agencies to collaborate with the goal of optimizing patient care and available resources, may be useful in Colorado and other states where cannabis use is now legal.

This study from Wang et al.¹ may serve as another example for medical toxicologists and public health experts currently tracking other health complications from increased availability of recreational cannabis, including increases in ED mental health visits related to cannabis use, increases in telephone calls to regional poison centers for exposure to cannabis, and many case reports of pediatric patients with significant morbidity from unintentional ingestion of cannabis gummies and other recreational cannabis products available for purchase at new dispensaries.⁶ The conclusion in Wang et al.¹ that growth in new recreational cannabis markets is associated with increased ED visits for vomiting will undoubtedly be confirmed by future rigorous studies in other states and it will not be surprising if we observe similar increases in ED visits for other adverse effects associated with increased cannabis availability. The huge tax revenue benefitting states that have legalized cannabis is obvious, but how that revenue is used deserves constructive debate by all stakeholders.⁷ It is necessary to apply a data-based approach to examine the financial and resource burden on the entire health care system from vomiting and other unintended consequences of legalizing cannabis.

ARTICLE INFORMATION
Open Access: This is an open access article distributed under the terms of the CC-BY License. © 2021 Mycyk MB et al. JAMA Network Open.

Corresponding Author: Mark B. Mycyk, MD, Research Division, Department of Emergency Medicine, EM Admin, Cook County Health, 1950 W Polk St, 7th Flr, Chicago, IL 60612 (mmycyk@cookcountyhhs.org).

Author Affiliations: Research Division, Department of Emergency Medicine, Cook County Health, Chicago, Illinois.

Conflict of Interest Disclosures: None reported.

REFERENCES