



ACMT

American College
of Medical Toxicology

Role of Medical Toxicologist in the Management of Patients with Substance Use Disorder

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The position of the American College of Medical Toxicology (ACMT), is as follows:

ACMT supports the role of medical toxicologists in the initial and long-term care of patients with substance use disorders and that they play an essential role in addressing this public health crisis. In the face of growing substance use and overdose mortality, the demand for clinicians to address this problem is not met by the current supply. Medical toxicologists - specialists in the management of overdose, poisoning, and complications from licit and illicit drugs - have and will continue to address the needs of this population. Medical toxicology services manage patients with intoxication, overdose, and provide medication assisted treatment of substance use disorder in acute and outpatient settings. These specialists receive training in the biological basis and psychosocial aspects of substance use disorders, pharmacology, clinical evaluation and management, and interpretation of drug testing.

Background

Morbidity and mortality related to substance use disorder has been consistently rising for over two decades. There were more than 107,000 overdose deaths in the US in 2021, representing a 15% annual increase from 2020. Most of the increase in overdose deaths is a result of fentanyl and its analogues, with stimulants contributing [1]. Approximately 10% of emergency department visits and inpatient hospitalizations are related to substance use [2]. In addition, there are countless more suffering from undiagnosed or untreated substance use disorders. Provider shortages and “treatment deserts” highlight the need for more clinicians able to treat these patients [3,4,5].

Medical Toxicology Training and Certification

Medical toxicology is the American Board of Medical Specialties subspecialty that focuses on the management of overdose, poisoning, and complications from legal and

illicit drugs. Medical toxicology board certification is co-sponsored by the American Board of Emergency Medicine (ABEM), the American Board of Pediatrics, and the American Board of Preventive Medicine (ABPM). After completing a primary residency, medical toxicology fellows receive focused training in management of patients with substance use disorder. For example, “Addiction Toxicology and Substance Use” is one of nine main subject areas in the Core Content of Medical Toxicology, which is considered the blueprint for medical toxicology fellowship training and the medical toxicology sub board certification exam [6]. Some medical toxicologists routinely provide longitudinal outpatient care of patients with substance use disorder.

Medical Toxicology Practice

The diverse practice settings, as well as the diverse primary residency training backgrounds of medical toxicologists, bridge gaps between other experts caring for patients with substance use disorders. Medical toxicologists practice in many settings, including dedicated clinical toxicology services, inpatient consultant services, outpatient clinical practices, emergency departments, and through poison centers, treating patients along the entire spectrum of disease severity and across all ages and demographics [9]. Medical toxicology services manage patients with intoxication, overdose, and withdrawal, in outpatient and inpatient settings. Medical toxicologists see acutely ill patients, often in emergency departments and critical care units and are positioned to manage acute intoxication, overdose, withdrawal, and provide medication assisted treatment of substance use disorder. Many medical toxicologists offer screening and counseling for substance use disorders and facilitate linkage to outpatient clinics, allowing for direct continuity of care.

Expertise in Pharmacology and Drug Testing

Medical toxicologists have advanced training in pharmacological and toxicological properties of substances. Knowledge of drug-drug interactions and pharmacogenomic interactions informs management of patients with substance use disorder. Expertise in pharmacology facilitates understanding of novel and emerging drugs and adulterants.

Medical toxicologists have expertise in the selection and interpretation of laboratory testing used in the care of patients with substance use disorders. Testing may be used therapeutically to monitor treatment efficacy, to verify a patient’s history of substance use, and to monitor adherence to medications for opioid use disorder. Analytical toxicology is another of nine domains included in the Core Content of Medical Toxicology [6]. From this training, medical toxicologists have proficiency with detection intervals, false positives and negatives of testing, and inherent limitations of different

testing methods. The medical toxicologist interprets and recognizes the limitations of point-of-care testing and presumptive and confirmatory drug tests. ACMT has provided written guidance on the appropriate use and interpretation of urine testing for cocaine, opioids, and tetrahydrocannabinol [10,11,12].

Addiction Research and Leadership Roles

Medical toxicologists serve in public health, clinical leadership, and research roles. On the local level, engaging experts in leadership roles can result in outpatient, inpatient, and discharge planning protocols that reduce readmission, emergency department utilization and provide financial value [13,14]. Medical toxicologists serving on pharmacy and therapeutics and formulary committees can help assure availability of medications and protocols for addiction treatment. As researchers, medical toxicologists engage in clinical, basic science, and epidemiological research to understand, diagnose, and treat patients with substance use disorders and the complications they suffer.

Summary

ACMT supports a role for medical toxicologists in the management of patients with substance use disorders. Medical toxicologists practice in a variety of inpatient and outpatient environments and have training and expertise in pharmacology, the complex pathophysiology of addiction, and drug test interpretation. Medical toxicologists can manage patients acutely following overdose or for withdrawal, and longitudinally for substance use disorder. Medical toxicologists have a knowledge base that is both complementary and additive to other specialists treating patients with substance use disorders. ACMT believes the input and guidance of physicians certified in medical toxicology are essential to provide the highest quality of care for patients with substance use disorders.

Disclaimer

While individual practices may differ, this is the position of the American College of Medical Toxicology at the time written, after a review of the issue and pertinent literature.

References

1. Centers for Disease Control and Prevention. U.S. overdose deaths in 2021 increased half as much as in 2020-But are still up 15%. https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm
Accessed 12/23/22

2. Suen LW, Makam AN, Snyder HR, Repplinger D, Kushel MB, Martin M, Nguyen OK. National Prevalence of Alcohol and Other Substance Use Disorders Among Emergency Department Visits and Hospitalizations: NHAMCS 2014-2018. *J Gen Intern Med.* 2022 Aug;37(10):2420-2428. doi: 10.1007/s11606-021-07069-w. Epub 2021 Sep 13. PMID: 34518978; PMCID: PMC8436853.
3. Cernasev A, Hohmeier KC, Frederick K, Jasmin H, Gatwood J. A systematic literature review of patient perspectives of barriers and facilitators to access, adherence, stigma, and persistence to treatment for substance use disorder. *Explor Res Clin Soc Pharm.* 2021 Jun 4;2:100029. doi: 10.1016/j.rcsop.2021.100029. PMID: 35481114; PMCID: PMC9029901.
4. Saloner B, Li W, Bandara SN, McGinty EE, Barry CL. Trends In The Use Of Treatment For Substance Use Disorders, 2010-19. *Health Aff (Millwood).* 2022 May;41(5):696-702. doi: 10.1377/hlthaff.2021.01767. PMID: 35500189.
5. Greater New York Hospital Association. The Opioid Workforce Act of 2021. <https://www.gnyha.org/position/opioid-workforce-act/>
6. Hendrickson RG, Bania TC, Baum CR, Greenberg MI, Joldersma KB, Keehbauch JN. The 2021 Core Content of Medical Toxicology. *J Med Toxicol.* 2021 Oct;17(4):425-436. doi: 10.1007/s13181-021-00844-5. Epub 2021 Jun 29. PMID: 34189709; PMCID: PMC8455791.
7. American Board of Preventative Medicine. Addiction Medicine. <https://www.theabpm.org/become-certified/subspecialties/addiction-medicine/> Accessed 12/23/22
8. American Board of Emergency Medicine. Addiction Medicine/Medical Toxicology Combined Training Now Available. <https://www.abem.org/public/news-events/abem-news/2019/11/15/addiction-medicine-medical-toxicology-combined-training-now-available>. Accessed 12/23/22
9. Laes JR. The Integration of Medical Toxicology and Addiction Medicine: a New Era in Patient Care. *J Med Toxicol.* 2016 Mar;12(1):79-81. doi: 10.1007/s13181-015-0523-7. PMID: 26576956; PMCID: PMC4781806.
10. American College of Medical Toxicology. Interpretation of urine analysis for cocaine metabolites. *J Med Toxicol.* 2015 Mar;11(1):153-4. doi: 10.1007/s13181-013-0360-5. PMID: 25715928; PMCID: PMC4371026.
11. Connors N, Kosnett MJ, Kulig K, Nelson LS, Stolbach AI. ACMT Position Statement: Interpretation of Urine for Tetrahydrocannabinol Metabolites. *J Med Toxicol.* 2020 Apr;16(2):240-242. doi: 10.1007/s13181-019-00753-8. Epub 2020 Jan 14. PMID: 31939053; PMCID: PMC7099115.
12. Stolbach A, Connors N, Nelson L, Kulig K. ACMT Position Statement: Interpretation of Urine Opiate and Opioid Tests. *J Med Toxicol.* 2022 Apr;18(2):176-179. doi: 10.1007/s13181-021-00864-1. Epub 2021 Nov 15. PMID: 34780053; PMCID: PMC8938527.

13. Wei J, Defries T, Lozada M, Young N, Huen W, Tulskey J. An inpatient treatment and discharge planning protocol for alcohol dependence: efficacy in reducing 30-day readmissions and emergency department visits. *J Gen Intern Med.* 2015 Mar;30(3):365-70. doi: 10.1007/s11606-014-2968-9. Epub 2014 Aug 5. PMID: 25092008; PMCID: PMC4351284.
14. Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, Barry KL. Benefit-cost analysis of brief physician advice with problem drinkers in primary care settings. *Med Care.* 2000 Jan;38(1):7-18. doi: 10.1097/00005650-200001000-00003. PMID: 10630716.