# Drug Utilization Review (DUR) Newsletter

COLORADO
Department of Health Care Policy & Financing

## Select HCPF Medication Use Policy Updates

**SUMMER 2021**

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## IMPORTANT: Update your practice site information!

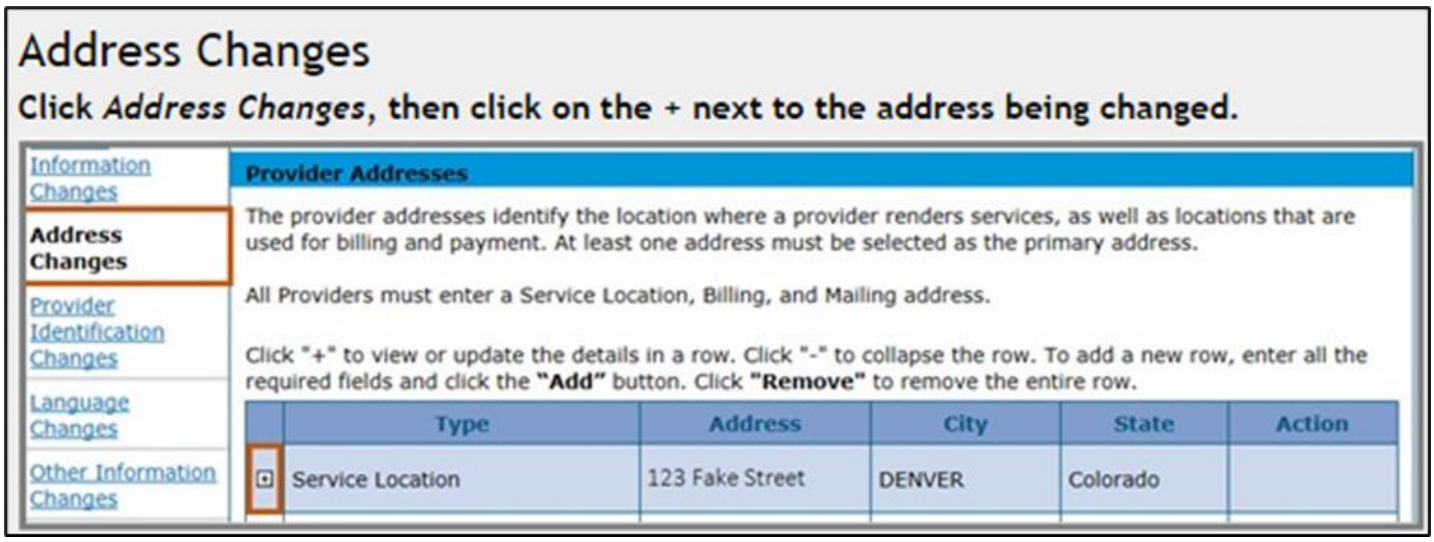
Have you changed practice sites since you first enrolled as a Health First Colorado provider? Has it been a while since you updated your mailing address? If you suspect that your information is out of date, take a few minutes to submit an online **Provider Maintenance request**.

The DUR team mails educational letters to individual prescribers. These retrospective DUR letters are member-specific. They contain information about potential opportunities to maximize safe medication use and help you avoid common problems related to drug therapy. If your mailing address is out of date, you're missing out on these customized communications!

After you complete your address change request you will receive a 6-digit tracking number (ATN). Once approved, the new address will show up in your account. The full process may take up to four weeks.

Type carefully! Change requests cannot be returned for corrections, so if you make an error, you will need to start over and submit a new request.

A **quick guide** is available at https://www.colorado.gov/pacific/hcpf/prov-maintenance




## And while you're updating address information…

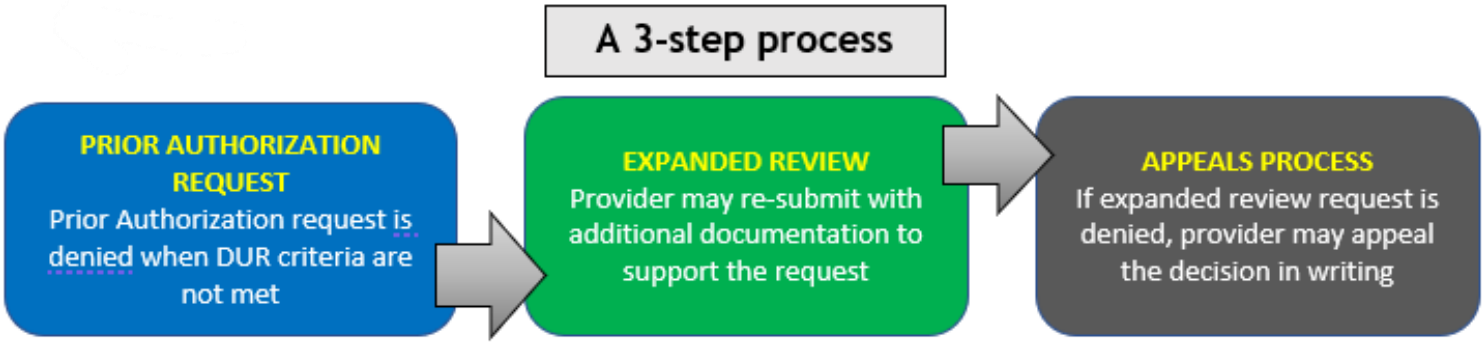
NPI

Keep in mind that information associated with your **National Provider Identifier (NPI)** also needs to stay current. Update your NPI address and profile at https://nppes.cms.hhs.gov/#/

## My initial Prior Authorization (PA) request was denied. What happens next?

Providers may use the Prior Authorization process to request that Health First Colorado cover a drug not listed on the Preferred Drug List or the Appendix P of the Preferred Drug List.

While it may seem intuitive that the next step is an appeal, that is often not the case. The intermediary step of **expanded review** allows prescribers to provide additional documentation to support their initial requests. The final step in the process, when necessary, is a written appeal to Health First Colorado's Pharmacy Benefits section to request further review.




## Members of the Colorado Drug Utilization (DUR) Board

The DUR Board (4 physicians, 4 pharmacists and 1 industry representative) serves in an advisory capacity and meets quarterly in February, May, August and November. More information is available on the DUR Board page at https://hcpf.colorado.gov/drug-utilization-review-board.

**Thank you, Board members, for your service to the State of Colorado**

| | | |
|---|---|---|
| Liza Claus, PharmD, MPH (Chair) | Todd Brubaker, DO | Lyle Laird, PharmD, BCPP |
| Alison Shmerling, MD, MPH (Vice Chair) | Brian Jackson, MD, MA | Patricia Lanius, BSPharm, MHA |
| Miroslav Anguelov, PharmD, BCPS | Shilpa Klocke, PharmD, BCPS | Scott VanEyk, MD |

## *NEW* Prescriber Tool for Health First Colorado (Colorado's Medicaid program)

The Health First Colorado Prescriber Tool is a platform accessible to prescribers through most electronic health record (EHR) systems.

The goals of the Prescriber Tool project are to:

- help improve health outcomes
- reduce administrative burdens for prescribers
- better manage prescription drug costs


The Prescriber Tool provides patient-specific information to prescribers at the point of care. The **opioid risk mitigation module** was implemented January 1, 2021 in collaboration with OpiSafe. This module provides easy access to PDMP data, tools for evidence-based treatment and overdose prevention, and identification of Opioid Use Disorder (OUD). Each prescriber must have an individual license to access the opioid risk module. Each license will provide prescribers with access to information for all their patients, including those not covered by Health First Colorado. For more information on how to purchase a license, go to Opisafe.com.

The **affordability module** implemented on June 1, 2021 allows for **electronic submission of Rx's** and **prior authorization requests**, plus **real time patient-specific pharmacy benefit information**. This module was implemented in collaboration with Surescripts and Cover My Meds. If your EHR system already has a connection to Surescripts and Cover My Meds, there will likely be no additional costs to providers. For more information on how to access these functionalities, contact your EHR vendor.

May 2021

DUR Board Meeting
PDL Topics

- Non-Opioid Analgesics
- Short-Acting Opioids
- Fentanyl Preparations
- Long-Acting Opioids
- Angiotensin Modulators & Combos
- Acne Agents
- Topical Antineoplastics
- Rosacea Agents
- Phosphate Binders
- Respiratory Inhalants
- Tetracyclines
- Skeletal Muscle Relaxants
- Topical Immunomodulators
- Androgenic Agents
- Newer Generation Antihistamines
- Benign Prostatic Hypertrophy Agents

**Are you sure your patients who use opioids have naloxone available for an overdose emergency?**

**See page 6**

## DUR Board Member Spotlight

by Juliana Gassmann, PharmD Candidate, DUR Intern

### Miroslav Anguelov, PharmD, BCPS

Dr. Miro Anguelov joined the DUR team as a board member in February of 2020. He completed his undergraduate and PharmD degrees at Butler University in Indianapolis.

Following graduation from pharmacy school, he completed a general PGY1 residency, followed by a PGY2 residency in ambulatory care. Miro is a board certified pharmacotherapy specialist (BCPS).

His current role as Lead Clinical Pharmacist for the Medication Access and Renewal Center at UC Health allows Dr. Anguelov to work behind the scenes to help patients gain access to a variety of specialty medications through an understanding and evolving knowledge of the many regulations and steps involved in gaining access to limited distribution drugs. He enjoys working outside the box of a normal clinical pharmacist role to help his patients gain access to specialty medications while also helping to bridge transitions of care throughout the course of a patient's disease.

Dr. Anguelov has a calling for public service and enjoys providing the lens of specialty pharmacy practice to the DUR board. He is most excited about being able to meet face to face with his colleagues next year at Board meetings. Outside of work, Miro enjoys skiing, biking, hiking as well as gardening cherry tomatoes and peppers.

## DUR Board Member Spotlight

**by Jacob Rasmussen, PharmD Candidate, DUR Intern**

### Todd Brubaker, DO

Dr. Todd Brubaker is a Pediatric Hospitalist at Children's Hospital Colorado – Colorado Springs and is also a member of the Colorado Springs Values in Inpatient Pediatrics (VIP) Network Committee.

Originally from Altoona, Iowa, Dr. Brubaker is a die-hard Iowa State fan. Go Cyclones! He earned his Doctor of Osteopathic Medicine degree from the Kirksville College of Osteopathic Medicine in Missouri, the founding college of osteopathic medicine.

Dr. Brubaker had a prior career as a civil environmental engineer for projects up and down the front range. He worked on federal Superfund sites in Fort Collins as a field engineer and was an environmental engineer at the Metro Wastewater Reclamation District in Denver. His engineering experiences, combined with his training in pediatrics, allowed him to become a pediatric environmental health physician and become involved in the start of the State of Nebraska Childhood Lead Poisoning Prevention Program. Dr. Brubaker has a wide range of pediatric medicine experiences in rural, outpatient, inpatient, and environmental settings.

Together with his wife and two children, Dr. Brubaker loves everything outdoors—as most Coloradans do—including biking, hiking, climbing, hunting and fly fishing. He hopes to bring a pediatric voice to the DUR Board as the team works together to optimize healthcare utilization for all Health First Colorado members.

## February 2021 DUR Board Meeting PDL Topics

- Neurocognitive Disorder Agents
- Self-Administered Glucagon
- Insulins
- Lipotropics
- Cardiovascular Agents
- Leukotriene Modifiers
- Topical Steroids
- Growth Hormone Products
- Bile Salts
- Multiple Sclerosis Agents
- Immune Globulins
- Anti-Migraine Agents - CGRPis
- Anti-Parkinson's Agents
- Atypical Antipsychotic Agents
- Sedative Hypnotics
- Anxiolytics
- Intranasal Rhinitis Agents
- Hemorrhoidal & Anorectal Agents
- Ophthamics
- Statins & Statin Combinations
- Lithium Agents

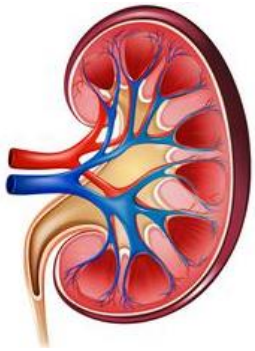
***HCPF Pharmacy Resources Page***
***https://www.colorado.gov/hcpf/pharmacy-resources#PDL***

***July 1, 2021 Colorado Preferred Drug List (PDL)***
***https://hcpf.colorado.gov/sites/hcpf/files/07-01-21%20PDLv2.pdf***

## DID YOU KNOW...that SGLT2 Inhibitors Offer Renal Protection?

Since 2015, ten randomized clinical trials assessed the cardiovascular safety of sodium–glucose cotransporter 2 (SGLT2) inhibitors, and then their potential renal and cardiovascular benefits of these drugs in over 88,000 patients. The results of Empagliflozin Cardiovascular Outcome Event Trial in Type 2 Diabetes Mellitus Patients (EMPAREG Outcome) showed major renal and cardiovascular protection which was completely unexpected. While not completely understood, the potential mechanisms appear to be largely independent of glycemic control and may be related to reduction in intraglomerular pressure, intrarenal renin-angiotensin-aldosterone system (RAAS) activity, inflammatory biomarkers, and renal hypoxia. These potential benefits translate into glomerular filtration rate (GFR) preservation as well as a reduction in blood pressure, tubular and glomerular damage, albuminuria, and ischemic renal damage.[1]

The first landmark trial highlighting the potential renal benefits of these agents was the Canagliflozin and Renal Events in Diabetes with Established Nephropathy Clinical Evaluation (CREDENCE) study.[2,3] In this double-blind, randomized trial, 4401 patients with type 2 diabetes and albuminuric chronic kidney disease (CKD) were assigned to either canagliflozin 100 mg po twice daily or placebo. Patients with advanced CKD (estimated GFR, < 30 ml/min) were excluded, but all patients had proteinuria (>300 mg/g) and were receiving RAAS blockage. The primary outcome was progression to end-stage kidney disease (dialysis, transplantation, or eGFR of <15 mL/min), doubling of the creatinine level from baseline, or death from renal or cardiovascular causes. With a mean follow-up of 2.5 years, the CREDENCE trial was stopped early as the risk of the primary outcome was 30% lower in the canagliflozin group compared with the placebo group (p=0.00001).



Since CREDENCE, a series of large clinical trials evaluating the effects on CKD and cardiovascular outcomes have been published. In addition to the CREDENCE trial, several others have looked at SGLT2 agents such as Dapagliflozin and Prevention of Adverse Outcomes in Chronic Kidney Disease (DAPA-CKD), Empagliflozin Outcome Trial in Patients with Chronic Heart Failure (EMPEROR-Reduced), and Evaluation of Ertugliflozin Efficacy and Safety Cardiovascular Outcomes (VERTIS CV) Trials.

In the DAPA-CKD trial, over 4000 patients with an eGFR between 25 and 75 ml/min and greater than 200 mg/g of albuminuria were assigned to receive either placebo or dapagliflozin 10 mg twice daily. The primary renal outcome was a decline in the eGFR of at least 50%, end-stage kidney disease, or death from renal or cardiovascular causes.[4] As with CREDENCE, this study was also stopped early because of significant efficacy noted in the dapagliflozin arm. During a mean follow-up of 2.4 years, 9.2% of patients in the dapagliflozin group and 14.5% of patients in the placebo group had a primary outcome event which equated to a 39% reduction in the renal outcome with dapagliflozin (p <0.001). Adverse events rates were similar in both groups.

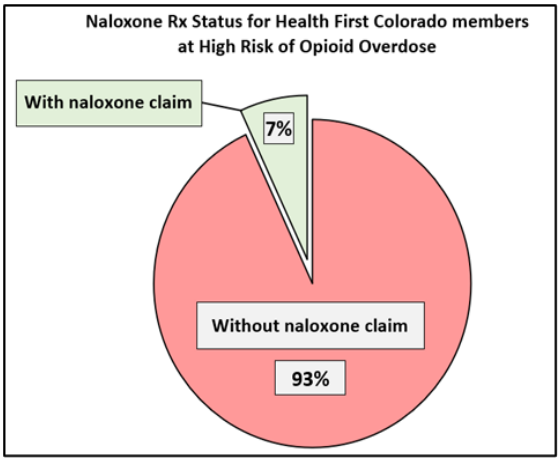
When taking into account the totality of the published data, some salient points become evident. **The SGLT2 inhibitors can lower all-cause mortality, cardiovascular mortality, nonfatal myocardial infarction, and renal related outcomes**. Additionally, this class of drugs can also reduce mortality and admission to the hospital for heart failure, as well as readmission for heart failure with reduced ejection fraction. To this end, the Health First Colorado Preferred Drug List covers SGLT2 inhibitors with the most robust data: empagliflozin, canagliflozin , and dapagliflozin.

# DON'T FORGET THE NALOXONE

## A Summary of Findings from a Clinical Module Characterizing Naloxone Use within Health First Colorado Members Prescribed Opioids

Opioid misuse and overdose continue to be a major public health crisis. Today Americans have a greater chance of dying from a drug overdose than from a motor vehicle accident.[1] On average, 130 Americans die each day from an opioid overdose, which includes prescription opioids and illegal opioids such as heroin and illicitly manufactured fentanyl.[2] Since 2000, the death rate attributed to opioid overdose increased by 200%.[3] From 1999 to 2017, almost 400,000 people died from an opioid overdose, with more than 200,000 deaths attributed to prescription opioids in this time period.[2,3]

The most common medications involved in prescription opioid overdose deaths include methadone, oxycodone, and hydrocodone.[4] In addition, life expectancy in the United States has continued to decrease; a child born in 2017 is now expected to live to be age 78.6 years.[5] This decline, in part, can be attributed to increasing deaths from drug overdose.[6]




The Substance Abuse and Mental Health Services Administration provides five strategies to help prevent overdose deaths, and pharmacists are in a unique position to play a vital role in each of these.[7] Community pharmacies dispense close to 250 million prescription opioids each year.[8] In addition to screening for opioid misuse using state Prescription Drug Monitoring Programs and discussing opioid-related risks with patients, pharmacists are in a position to identify patients who may be at risk for overdose and promote the use of the lifesaving drug naloxone.

Community-based and public health organizations have established overdose education and naloxone distribution programs to help prevent opioid-overdose fatalities by providing prevention services to laypersons who might witness an overdose. This program was started in Chicago in the late 1990s and has expanded to more than 130 programs throughout the U.S.[9] Acknowledging the benefit and success of such programs in reducing fatal overdoses, there have been a number of initiatives to allow for the distribution of naloxone beyond the traditional prescription. All 50 states and the District of Columbia have passed legislation increasing naloxone access.[10] These new laws extend access to laypersons by expanding who can receive naloxone beyond those directly at risk of an overdose; by allowing for the distribution of naloxone beyond pharmacists; and by simplifying the process of obtaining naloxone.[11]

To this end, on July 23, 2020 the U.S. Food and Drug Administration recommended in a Drug Safety Communication that labeling for opioid pain medicine and medicine to treat opioid use disorder be updated to recommend that as a routine part of prescribing these medicines, health care professionals should discuss the availability of naloxone with patients and caregivers, both when beginning and renewing treatment.[12,13] Based on these recommendations, we evaluated overall prescribing of naloxone in conjunction with those members enrolled in Health First Colorado who were receiving opiates stratified by morphine milligram equivalent (MME) and high-risk for opiate overdose. Additionally, we evaluated this objective pre- and post- release of the FDA Drug Safety Communication regarding increased access to naloxone and expanded education regarding its use.

**DON'T FORGET THE NALOXONE, continued**

While utilization of naloxone in members receiving opiates has increased within the state, the percentage of members who truly warrant the drug (e.g., high risk for opiate overdose or morphine milligram equivalent (MME) >120 mg) remains low. A total of 46,173 members were identified as having filled an opioid between July 1, 2020 and September 30, 2020. From this cohort, 3,474 (7.5%) also had a naloxone fill within the lookback or study period. The majority of naloxone was prescribed by a professional other than a pharmacist (78%), typically occurred prior to filling the opiate (75%), and in the setting of an MME of 0-120 mg (65%). **Based on our definition of high-risk members for opioid overdose, 73,820 members were identified and of these members only 6.9% filled naloxone within the lookback or study period.**

Pharmacists in the community are ideally situated to counsel members about opiate antagonists and offer to dispense naloxone. Colorado Senate Bill 21-011, signed into law June 4, 2021, will require pharmacists in our state to offer to prescribe naloxone for all opioid prescriptions ≥ 90 MME or if the patient has a concomitant prescription for a benzodiazepine, carisoprodol, gabapentin, tramadol, or a sedative-hypnotic. This new law takes effect in September 2021.

If you have questions regarding current policy surrounding prescribing naloxone, please refer to this website from the Colorado Department of Public Health and Environment:
https://cdphe.colorado.gov/prevention-and-wellness/injury-prevention/overdose-prevention/naloxone-standing-order

**When prescribing opiates, DON'T FORGET THE NALOXONE**

## AVOID OPIATES IN THE TREATMENT OF MIGRAINE: Opioid Utilization Among Health First Colorado Members with Migraine or Episodic Cluster Headaches

Migraine, a highly prevalent chronic neurologic disease, typically manifests with episodic attacks of pain associated with other incapacitating symptoms, such as nausea, allodynia, photophobia and phonophobia.[1,2] The second-highest specific cause of disability worldwide,[3] migraine produces substantial individual, familial, economic, and societal burdens.[4-6] Management of migraine includes acute and preventive medication, as well as nonpharmacologic approaches.

The goals of acute treatment include rapid resolution of pain and associated symptoms without recurrence, side effects, and the need for backup or rescue medications.[7] Practice guidelines do not recommend opioids for treating migraine except under limited circumstances. However, a substantial proportion of individuals use opioids for acute treatment of migraine.[7-12] In the American Migraine Prevalence and Prevention (AMPP) study, approximately 30% of community-residing respondents reported opioid use for migraine.[9] In the emergency department (ED), 59% of visits for migraine involved opioid administration or prescription.[10]

Despite the potential for short-term benefits, opioids are associated with only modest initial efficacy, increased risk for migraine chronification,[13-17] and potential for misuse, abuse, and dependence.[9,18] Additionally, opioids are pro-nociceptive, and result in a cascade of harmful pathophysiologic changes. These molecular, cellular, and chemical alterations, in turn, cause adverse clinical consequences. And the sequelae to opioid use in migraine impact not just patients, but the society as a whole. For all of these reasons, opioids should be avoided in the treatment of migraine, both acutely and chronically. To this end, the Colorado Evidenced-Based Drug Utilization team evaluated whether this is a utilization issue for our members.

**AVOID OPIATES IN THE TREATMENT OF MIGRAINE, continued**

We identified 23,863 members with a migraine (n=23,750) or episodic cluster headache (ECH) (n=113) diagnosis from April 1, 2019 – March 31, 2021, with no history of cancer or sickle cell disease, no opioid fills during the six months prior to their earliest headache diagnosis, and at least six months of enrollment prior to and following their index migraine/ECH diagnosis. From this cohort, we found 3,024 members (2,790 adult members, 234 pediatric members) with a migraine or ECH diagnosis who had at least one opioid fill during the 180 days following their index migraine/ECH diagnosis.

Overall, an opioid fill was associated with significantly higher odds of having also filled a prophylactic migraine medication before and after migraine diagnosis, as well as abortive therapy when compared with those members without an opioid fill. Independent of when the member's migraine was diagnosed, an opioid fill was associated with a significantly higher odds of an all-cause emergency department visits and all-cause inpatient admissions for both adult and pediatric members when compared to members who did not fill an opioid. On a positive note, we found a significant downward trend in number of members filling an opioid, by headache diagnosis, before and after the emergence of SARS-CoV-2.

Compared to estimates in the literature, the percentage of adult Health First Colorado members who filled an opioid at any time and had a migraine diagnosis was lower than the national average (28% vs 30%, respectively); however, we believe this estimate could be lower. The Department will be evaluating these findings and will be developing polices to remind providers that OPIATES SHOULD BE AVOIDED IN THE TREATMENT OF MIGRAINE.

Our mission is to improve health care equity, access and outcomes for the people we serve while saving Coloradans money on health care and driving value for Colorado.
https://hcpf.colorado.gov

## References


**DID YOU KNOW…that SGLT2 Inhibitors Offer Renal Protection?**

1. Tuttle KR, Brosius FC 3rd, Cavender MA, et al. SGLT2 inhibition for chronic kidney disease and cardiovascular disease in type 2 diabetes: report of scientific workshop sponsored by the National Kidney Foundation. Am J Kidney Dis. 2021;77(1):94-109.
2. Perkovic V, Jardine MJ, Neal B, et al; CREDENCE trial investigators. Canagliflozin and renal outcomes in type 2 diabetes and nephropathy. New Eng J Med. 2019;380(24):2295-2306.
3. Evaluating the effects of canagliflozin on cardiovascular and renal events in patients with type 2 diabetes mellitus and chronic kidney disease according to baseline HbA1c, including those with HbvA1c <7%: results from the CREDENCE trial. Circulation. 2020;141(5):407-410.
4. Heerspink HJL, Stefánsson BV, Correa-Rotter R, et al; DAPA-CKD Trial Committees and Investigators. Dapagliflozin in patients with chronic kidney disease. New Engl J Med. 2020;383(15):1436-1446.

**DON'T FORGET THE NALOXONE**

1. National Safety Council Injury Facts. Odds of dying. https://injuryfacts.nsc.org/all-injuries/preventable-death-overview/odds-of-dying/. Accessed June 24, 2021.
2. CDC. Opioid overdose. Understanding the epidemic. Published December 19, 2018. www.cdc.gov/drugoverdose/epidemic/index.html Accessed June 24, 2021.
3. Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in drug and opioid overdose deaths—United States, 2000-2014. MMWR Morb Mortal Wkly Rep. 2016;64(50-51):1378-1382.
4. CDC. Opioid overdose. Prescription opioid data. Published December 21, 2018. www.cdc.gov/drugoverdose/data/prescribing.html. Accessed June 24, 2021.
5. CDC. National Center for Health Statistics. Data Briefs. Number 328: November 2018. Published November 29, 2018. www.cdc.gov/nchs/products/databriefs/db328.htm. Accessed June 24, 2021

6. Dyer O. US life expectancy falls for third year in a row. BMJ. 2018;363:k5118.
7. SAMHSA Publications. Opioid overdose prevention toolkit. https://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit/SMA18-4742. Accessed June 24, 2021.
8. Volkow ND, McLellan AT. Opioid abuse in chronic pain—misconceptions and mitigation strategies. N Engl J Med. 2016;374:1253-1263.
9. Wheeler E, Jones TS, Gilbert MK, Davidson PJ; CDC. Opioid overdose prevention programs providing naloxone to laypersons - United States, 2014. MMWR Morb Mortal Wkly Rep. 2015;64(23):631-635.
10. Network for Public Health Law. Legal interventions to reduce overdose mortality: naloxone access and overdose Good Samaritan laws. www.networkforphl.org/_asset/qz5pvn/network-naloxone-10-4.pdf. Accessed June 24, 2021.
11. Substance Abuse and Mental Health Services Administration. Preventing the consequences of opioid overdose: understanding naloxone access laws. www.samhsa.gov/capt/tools-capt-learning-resources/preventing-consequences-opioid-overdose-naloxone-access. Accessed June 24, 2021.
12. FDA Requiring Labeling Changes for Opioid Pain Medicines, Opioid Use Disorder Medicines Regarding Naloxone. Press Announcement. US Food and Drug Administration Web site. Published July 23, 2020. Available at: https://www.fda.gov/news-events/press-announcements/fda-requiring-labeling-changes-opioid-pain-medicines-opioid-use-disorder-medicines-regarding. Accessed June 24, 2021.
13. FDA recommends health care professionals discuss naloxone with all patients when prescribing opioid pain relievers or medicines to treat opioid use disorder. Drug Safety Communication. US Food and Drug Administration Web site. Published July 23, 2020. Available at: https://www.fda.gov/drugs/drug-safety-and-availability/fda-recommends-health-care-professionals-discuss-naloxone-all-patients-when-prescribing-opioid-pain. Accessed June 24, 2021.

## AVOID OPIATES IN THE TREATMENT OF MIGRAINE

1. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.
2. Pietrobon D, Moskowitz MA. Pathophysiology of migraine. Annu Rev Physiol 2013;75:365–391.
3. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet 2017;390:1211–1259.
4. Lipton RB, Bigal ME, Diamond M, Freitag F, Reed ML, Stewart WF. Migraine prevalence, disease burden, and the need for preventive therapy. Neurology 2007;68:343–349.
5. Lipton RB, Bigal ME, Scher AI, Stewart WF. The global burden of migraine. J Headache Pain 2003;4:S3–S11.
6. Buse DC, Murray S, Dumas PK, et al. Life with migraine, effect on relationships, career and finances, and overall health and well-being results of the Chronic Migraine Epidemiology and Outcomes (CAMEO) study [abstract MTIS2008-009]. Cephalalgia 2018;38(1 suppl):9–10.
7. Silberstein SD. Practice parameter: evidence-based guidelines for migraine headache (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2000;55:754–762.
8. Bonafede M, Wilson K, Xue F. Long-term treatment patterns of prophylactic and acute migraine medications and incidence of opioid-related adverse events in patients with migraine. Cephalalgia 2019;39:1086–1098.
9. Buse DC, Pearlman SH, Reed ML, Serrano D, Ng-Mak DS, Lipton RB. Opioid use and dependence among persons with migraine: results of the AMPP study. Headache 2012;52:18–36.
10. Friedman BW, West J, Vinson DR, Minen MT, Restivo A, Gallagher EJ. Current management of migraine in US emergency departments: an analysis of the National Hospital Ambulatory Medical Care Survey. Cephalalgia 2015;35:301–309.
11. Franklin GM. Opioids for chronic noncancer pain: a position paper of the American Academy of Neurology. Neurology 2014;83:1277–1284.
12. Langer-Gould AM, Anderson WE, Armstrong MJ, et al. The American Academy of Neurology's top five choosing wisely recommendations. Neurology 2013;81:1004–1011.
13. Lipton RB, Fanning KM, Serrano D, Reed ML, Cady R, Buse DC. Ineffective acute treatment of episodic migraine is associated with new-onset chronic migraine. Neurology 2015;84:688–695.
14. Mathew NT, Reuveni U, Perez F. Transformed or evolutive migraine. Headache 1987;27:102–106.
15. Bigal ME, Lipton RB. Excessive acute migraine medication use and migraine progression. Neurology 2008;71:1821–1828.
16. Bigal ME, Lipton RB. Clinical course in migraine: conceptualizing migraine transformation. Neurology 2008;71:848–855.
17. Bigal ME, Lipton RB. Overuse of acute migraine medications and migraine chronification. Curr Pain Headache Rep 2009;13:301–307.
18. Finocchi C, Viani E. Opioids can be useful in the treatment of headache. Neurol Sci 2013;34(suppl 1):S119–S124.

## IMAGES

1. Migraineur with tablets. CC0 1.0 Universal (CC0 1.0) Public Domain Dedication. https://pxhere.com/en/photo/1448737. License: https://creativecommons.org/publicdomain/zero/1.0/
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