Reducing Concurrent Opioid and Benzodiazepine Prescriptions

Targeted messages to providers did not reduce concurrent prescriptions

Target a Priority Outcome Between 2004 and 2012, military members reported greater opioid use than the general population, and opioid prescriptions among Veterans increased by over 76%. In 2017, the Department of Defense (DoD) and the Department of Veterans Affairs (VA) released the "VA/DoD Clinical Practice Guideline for Opioid Therapy for Chronic Pain," which prioritizes safe opioid prescribing practices. The Defense Health Agency (DHA) in the DoD seeks to increase adherence to the prescribing guidelines, which strongly recommend against the concurrent use of opioids and benzodiazepines, by reducing concurrent prescriptions. Taken together, these drugs can cause respiratory depression, enhanced sedation, and death. For patients currently on long-term opioid therapy and benzodiazepines, the guidelines call for healthcare providers to "consider tapering one or both when risks exceed benefits and obtaining specialty consultation as appropriate."[1]

Translate Evidence-Based Insights Growing evidence from OES and outside researchers show that low-cost, targeted messages to prescribers can be an effective way to improve guideline conformity of prescribing behavior.[2] Targeted messages can address common barriers to guideline conformity, namely: knowledge of clinical guidelines, uncertainty about how to safely modify patient behavior to comply with the guidelines, and the challenge of coordination of care across multiple providers.[3]

OES and DHA designed a targeted message for opioid prescribers, benzodiazepine prescribers, and primary care managers of patients newly identified as having concurrent opioid and benzodiazepine prescriptions. The message provided information about the patient's concurrent prescriptions and prescription history, references to the VA/DoD clinical guideline and risk to patient, action steps and relevant resources about how to safely modify the patient's treatment plan, and contact information and encouragement to coordinate across providers in the Military Health System (MHS). All of a patient's MHS providers received the message as an encrypted group email with a concurrent prescription report attached.

Patients with concurrent prescriptions were identified using the DHA's opioid registry, a tool developed by the DHA to support pharmacists, physicians, and other health care providers in improving the safety and quality of care of patients with opioid prescriptions. The registry combines data from multiple systems to provide near real-time updates about patient opioid prescription information.

Embed Tests This evidence-based intervention was tested within the National Capital Region (NCR) / MHS with an individual level randomized controlled trial for 22 months starting in June 2019. Each week, patients with past 30-day concurrent opioid-benzodiazepine prescriptions and at least one NCR provider were identified through an existing opioid registry. Between June 2019 and March 2021, 2,237 patients were randomly assigned to one of two conditions: treatment as usual (in which providers received no message and could access the opioid registry

[1] U.S. Department of Veteran Affairs, Department of Defense, "VA/DoD clinical practice guideline for opioid therapy for chronic pain," The Opioid Therapy for Chronic Pain Working Group with support from The Office of Quality, Safety, and Value, and Office of Evidence Based Practice, Revised February, 2017.

[2] Sacarny, Adam, Michael L. Barnett, Jackson Le, Frank Tetkoski, David Yokum, and Shantanu Agrawal. "Effect of peer comparison letters for high-volume primary care prescribers of quetiapine in older and disabled adults: a randomized clinical trial." *JAMA Psychiatry* 75, no. 10 (2018): 1003-1011.

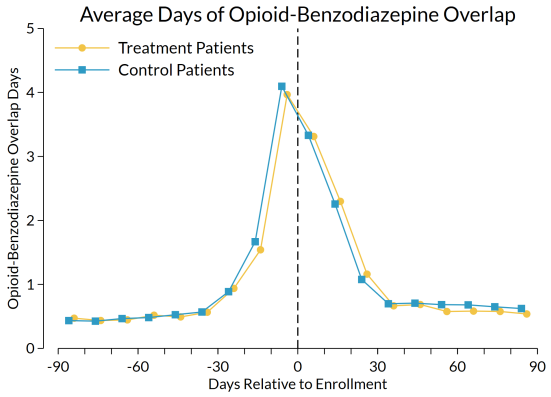
[3] Grol, Richard, and Michel Wensing. "What drives change? Barriers to and incentives for achieving evidence-based practice." *Medical Journal of Australia* 180 (2004): S57-S60.

or other medical records as usual), or the targeted message.[4]

Analyze Using Existing Data Using prescribing data collected by the military in its Military Health System Management and Reporting Tool (M2) database we compared the volume of prescriptions filled by patients in the treatment and control group. We compared patients' total receipt of opioids (measured as the days supply of their pharmacy fills), total receipt of benzodiazepines (also measured as the days supply), and overlapping days of opioids and benzodiazepines during the 90 days following enrollment in the study.

We also studied the effects of the targeted messages on patients' prescribers and/or primary care managers, based on whether their first patient enrolled in the study was assigned to the treatment or control condition. We analyzed providers' prescribing to all patients, not just patients in the study, to test if emails led to broader changes in how they prescribed opioids and benzodiazepines.[5]

Results There was no statistically significant difference in patients' total receipt of opioids, total receipt of benzodiazepines, or overlapping days of opioids and benzodiazepines during the 90 days following the intervention (*p*-value of joint test = 0.79).[6] Following enrollment, average opioid receipt was 21.7 days among control patients and the adjusted difference (treatment vs. control) was 1.2 days (p = 0.82, 95% CI [-1.4, 3.8]). Average benzodiazepine receipt was 20.0 days and among control patients, and the adjusted difference was 0.4 days (p = 0.74, 95% CI [-3.0, 2.1]). The average number of days with overlapping opioids and benzodiazepines was 10.6 among control patients, and the adjusted difference was 0.1 days (p = 0.44, 95% CI [-1.1, 0.9]).[7]



Results were similar at the provider level. There was no statistically significant difference in providers' prescribing of opioids (p = 0.90, 95% CI [-30.4, 26.5]), prescribing of benzodiazepines (p = 0.29, 95% CI [-10.6, 35.8]), and prescribing of overlaps of these two drugs (p = 0.84, 95% CI [-3.1, 3.9]), (p-value of joint test = 0.76).[8]

Build Evidence This evaluation of targeted messages builds evidence as DHA seeks to make prescribing safer throughout the health system. The project shows that DHA's existing opioid registry can be leveraged to identify at-risk patients and generate targeted messages for providers to encourage adherence to prescribing guidelines. While the results do not show that the messages changed prescribing, they demonstrate that promising new approaches to encourage quality and safety can be deployed and rigorously evaluated in the MHS.

[4] Brutcher, Robert, Christopher Spevak, Alan Sim, Elana Safran, Adam Sacarny, and Mary Steffel. (2019). Reducing Concurrent Opioid-Benzodiazepine Prescriptions. Identification No. NCT03887247. Retrieved from: https://clinicaltrials.gov/ct2/show/NCT03887247.

[5] Unless noted otherwise, all of the analyses reported in this abstract were prespecified in an analysis plan, which can be found at https://oes.gsa.gov.

[6] Sacarny Adam, Elana Safran, Mary Steffel, Jacob R. Dunham, Orolo D. Abili, Lobat Mohajeri, Patricia T. Oh, Alan Sim, Robert E. Brutcher, and Christopher Spevak. Effect of Pharmacist Email Alerts on Concurrent Prescribing of Opioids and Benzodiazepines by Prescribers and Primary Care Managers: A Randomized Clinical Trial. *JAMA Health Forum.* 2022;3(9):e223378.

[7] We assessed the primary outcome using one-sided tests to establish whether the treatment was superior to the control and maximize statistical power, and reported the p-value of the following joint two-sided test of the three primary outcome components (we did not report a joint one-sided test because there is no standard approach to doing so).

[8] We assessed secondary outcomes using two-sided tests, and reported the p-value of the following joint test of the three primary outcome components.