

## INTRODUCTION

Low value care is care that has been identified by both research literature and medical best practices groups (i.e., Choosing Wisely®) as having no net health benefits to patients, being unnecessary, and in some cases, causing harm. Low value prescription drugs merit concern due to both potential harmful effects to the individual (e.g., dependence, side effects) or society (e.g., antibiotic resistance) in addition to unnecessary health care spending. Most research on low value care uses Medicare data, focusing especially on services such as low value imaging, testing, or procedures. Low value care research that uses commercial claims data or focuses on low value prescribing is less common. This study operationalizes low value prescribing guidelines from literature and medical recommendations to evaluate trends and prevalence of low value prescribing in the commercial Massachusetts market.

## OBJECTIVES

This study characterized low value prescribing and spending in the Massachusetts commercial market using five drug categories (antibiotics, anticholinergics, antipsychotics, benzodiazepines, and gabapentinoids). These particular low value prescriptions were chosen because of their suitability to be measured and evaluated in commercial claims. Each measure had its own population of consideration, denominator which included the relevant patients, exclusions for the denominator, and restrictions for the numerator. The objective of the study was to identify utilization rates of prescriptions that have been deemed low value, spending associated with low value care, and trends in these measures over time.

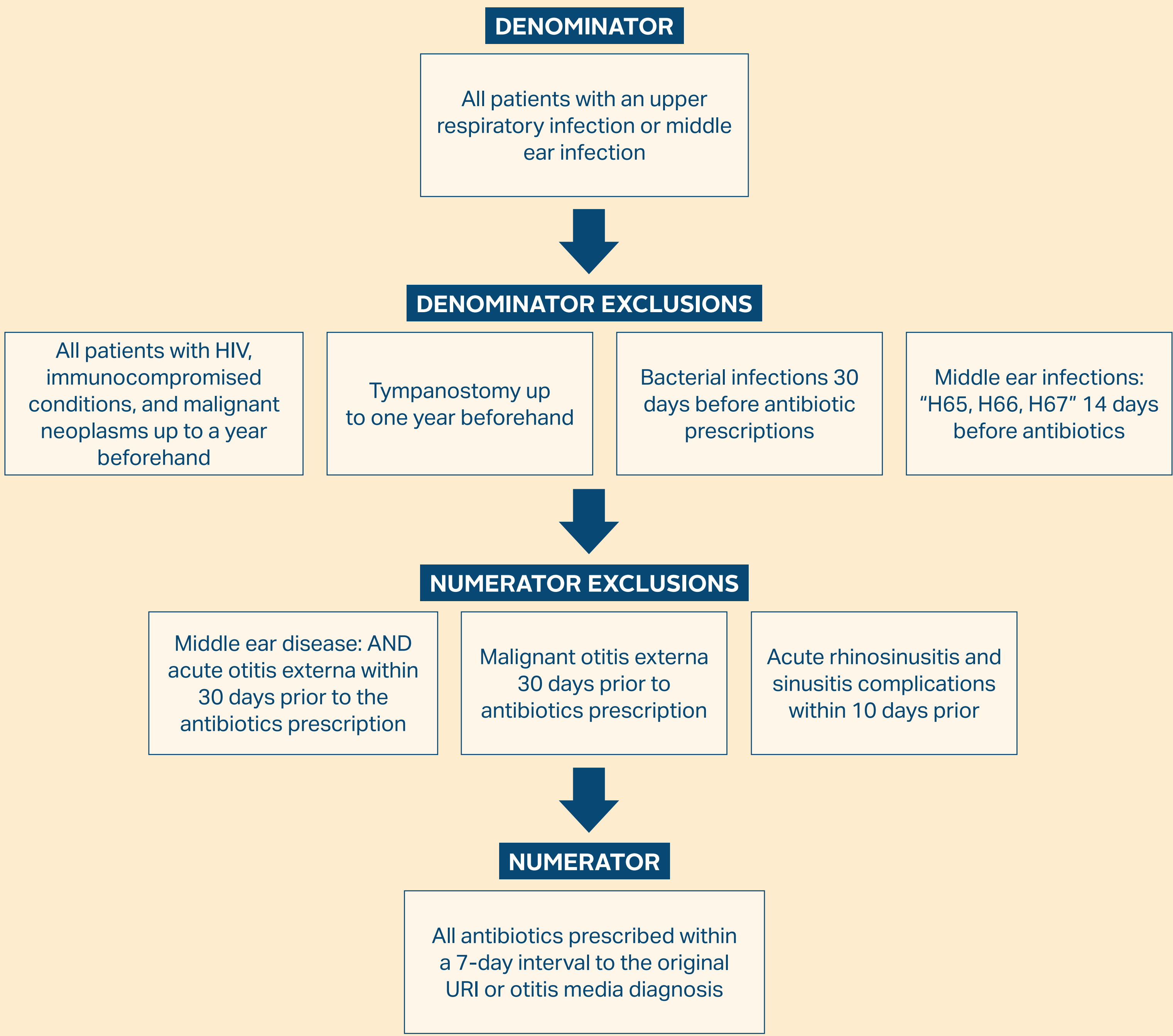
## STUDY DESIGN

Five measures were identified using literature and guidelines. Antibiotics and antipsychotics were identified from Mafi et al. (2021), benzodiazepines from Luijendijk et al. (2008), and anticholinergics and gabapentinoids from the Lown Institute (2022) (see *Sources*). Two of the measures examined LVC prescribing where the prescription shouldn't have been written (antibiotics and gabapentinoids), two measures examined concurrent use of two drugs from the same class (antipsychotics, anticholinergics), and the last measure evaluated LVC due to chronicity of prescription (benzodiazepines).

Prescription drug claims from the Massachusetts all payer claims database (APCD) from 2017-2021 were linked with medical claims data to identify low value care (LVC) prescriptions based on presence or lack of specific diagnosis codes according to the literature reviewed. Prescriptions were identified using NDC drug codes which were then compiled into the relevant prescription categories, consistent with the literature findings and matched to pharmacy claims. Results are shown from 2018-2021 while 2017 was used as a look-back period in some cases where, for example, patient medical history excluded certain utilization from the definition of low value care.

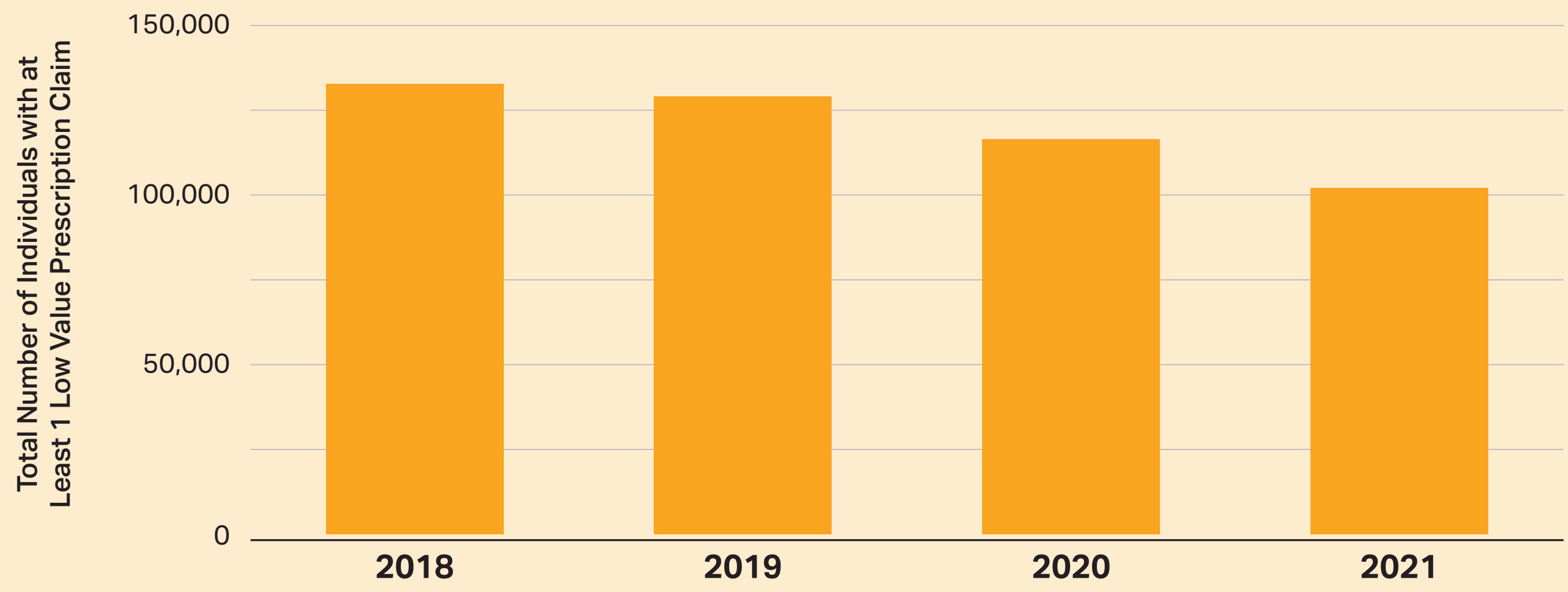
## RESULTS

EXHIBIT 1. Flow Chart of Low Value Antibiotics Prescribing Identification



Source: Mafi JN, Reid RO, Baseman LH, et al. Trends in low-value health service use and spending in the US Medicare fee-for-service program, 2014-2018. JAMA Netw Open. 2021;4(2):e2037328. doi:10.1001/jamanetworkopen.2020.37328

EXHIBIT 2. Total Number of Individuals with at Least 1 Low Value Prescription Claim from 2018 to 2021, Scaled to the Full Massachusetts Commercial Market



Sources: HPC analysis of Center for Health Information and Analysis Massachusetts All-Payer Claims Database, v2021, 2021

Out of 1,668,048 unique individuals in 2021, the HPC identified low value prescribing for 8,889 antibiotics, 2,607 antipsychotics, 9,607 benzodiazepines, 4,847 anticholinergics, and 8,988 gabapentinoids patients. In 2021, APCD spending on low value prescribing, scaled to the full commercial market, was \$184,459 for antibiotics, \$1,149,317 for antipsychotics, \$374,200 for anticholinergics, \$1,364,486 for benzodiazepines, and \$1,197,868 for gabapentinoids. These amounts of spending and use represented a decrease from 2018.

Per 100 patients prescribed these medications in the respective denominators, after exclusions, 26 patients had at least one low value prescription for antibiotics, 21 for antipsychotics, 9 for anticholinergics, 19 for benzodiazepines, and 51 for gabapentinoids.

Interpreted in a different way, after exclusions, 26% of all patients with upper respiratory and ear infections received at least one low value antibiotics prescription in 2021. After exclusions, 21% of all patients that were prescribed antipsychotics were unnecessarily prescribed a concurrent antipsychotic before enough of an overlap period had passed between distinct antipsychotic prescriptions. After exclusions, 9% of all patients that were prescribed anticholinergics were unnecessarily prescribed a concurrent anticholinergic before enough of an overlap period had passed between distinct anticholinergic prescriptions. After exclusions, 19% of patients that were prescribed benzodiazepines were prescribed an inappropriate and/or harmful amount/duration of medication. After exclusions, 51% of patients that were prescribed a gabapentinoid were prescribed the medication without a justified diagnosis of epilepsy or neuropathic pain.

## CONCLUSIONS

As with other studies that use medical and pharmacy claims data to identify low-value care, the researchers encountered a lack of clinical detail (that might be included in patients' EHRs for example), which could lead results to be biased upwards (or downwards). Nevertheless, these results point to significant unnecessary prescribing and this study adds to a growing arsenal of measures that could be used to evaluate health systems and enhance the quality and affordability of care.

## POLICY IMPLICATIONS

Low value care represents excessive, unnecessary, and wasteful spending, which is ultimately borne by patients and consumers through higher premiums, deductibles, and cost sharing. LVC can also be harmful for patients through the possibility of adverse health effects, psychological stress and worry, population-level issues, and unnecessary time, appointments, tests, and procedures through "care cascades." Though decreases in these measures were observed from 2018 to 2021 for low value prescribing, the extent of low-value prescribing in 2021 was significant, affecting as many as 1 in 4 patients with a given diagnosis. Health systems, insurers, and policymakers should strengthen efforts to address unnecessary care.

## CONTACT

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- 1 Mafi JN, Reid RO, Baseman LH, et al. Trends in low-value health service use and spending in the US Medicare fee-for-service program, 2014-2018. JAMA Netw Open. 2021;4(2):e2037328. doi:10.1001/jamanetworkopen.2020.37328

2 Garber, Judith. Lown Institute. How to identify low-value prescribing practices. February 28, 2022. <https://lowninstitute.org/how-to-identify-low-value-prescribing-practices/>
- 3 Luijendijk, Hendrika J., Henning Tiemeier, Albert Hofman, Jan Heeringa, and Bruno H. Ch Stricker. "Determinants of chronic benzodiazepine use in the elderly: a longitudinal study." *British journal of clinical pharmacology* 65, no. 4 (2008): 593-599.

4 ABIM Foundation. 2023. Choosing Wisely: A Watershed Moment in Health Care.

