

# Medication Review and Documentation in Physician Office Practice

**CONTEXT.** Adverse drug reactions and drug–drug interactions are common. Medication-induced morbidity might be prevented through the documentation of medicines in the medical record and review of the medical record before new medications are prescribed.

**PRACTICE PATTERN EXAMINED.** Documentation and review by primary care physicians of patient use of prescription drugs, over-the-counter drugs (OTCs), nutritional supplements, and herbal and other alternative treatments.

**DATA SOURCE.** A stratified random sample of 1802 internists and family practitioners from the American Medical Association Physician Masterfile was surveyed; 655 physicians responded (response rate, 36%).

**RESULTS.** 99.8% of physicians reported documenting prescription drugs in the medical record. Fewer reported documenting OTCs (68%) or nutritional supplements (63%); only 47% documented herbal and other alternative treatments. Almost all respondents reported reviewing prescription medications before prescribing a new therapy (99.8%), but only 86% reported reviewing OTCs at the same time. Fewer than half of physicians reported reviewing nutritional supplements or herbal and other alternative treatments before prescribing a new therapy.

**CONCLUSIONS.** This study draws on self-reported data, and the response rate was low. Thus, the results probably overestimate actual rates of documentation and review. Review and documentation of nonprescription substances are uncommon in primary care practice.

Many problems have been associated with drug therapy. There is substantial documentation of widespread adverse drug events,<sup>1-3</sup> medication errors,<sup>4,5</sup> and medication-induced morbidity and mortality,<sup>6</sup> particularly among older patients.<sup>6-8</sup> Problems associated with drug therapy cost the health care industry \$20 billion<sup>9</sup> to \$76.6 billion,<sup>10</sup> and associated deaths are increasing.<sup>5</sup>

Two thirds of all physician office visits result in a prescription.<sup>11</sup> Patients, particularly older patients, are likely to visit several physicians for a variety of conditions and thus are likely to receive multiple prescriptions. In addition to receiving prescribed drug therapies, patients are likely to “self-medicate” with over-the-counter (OTC) drugs, nutritional supplements, and herbal and other alternative remedies.<sup>12-15</sup> These substances may interact with or produce comorbid conditions.<sup>6,9,16-22</sup> Routine review of use of these substances would help physicians understand and manage the patient’s condition; could guard against drug-induced illness and death; might prevent unnecessary drug use<sup>16</sup>; and might reduce numbers of physician visits, emergency department visits, and hospitalizations.<sup>17</sup>

To examine the practice of reviewing and documenting medication use in the medical record, we conducted a nationwide survey of family practitioners and internal medicine specialists about routine medication management practices. Specifically,

*The abstract of this paper is available at [ecp.acponline.org](http://ecp.acponline.org).*

we asked physicians about habits related to reviewing medications and documenting, in the medical record, information on the use of a wide range of medications.

## Methods

### Study Sample

The study participants were a stratified random sample of primary care physicians (internists and family practitioners) drawn from the American Medical Association Physician Masterfile, a database of all physicians licensed in the United States. Of the 2000 physicians surveyed, 198 were ineligible because they no longer practiced (they were deceased, retired, or no longer working in primary care settings). Thus, 1802 internists and family practitioners currently in ambulatory care practice made up our sample.

### Study Design

We developed a survey instrument with input from more than 20 experts in the field of medication management. The survey consisted of 24 multiple-part questions related to medication management practices and demographic characteristics. This paper addresses findings resulting from 2 of the 24 questions. These 2 questions were related to how physicians document medications in the medical record and how physicians review medications with patients.

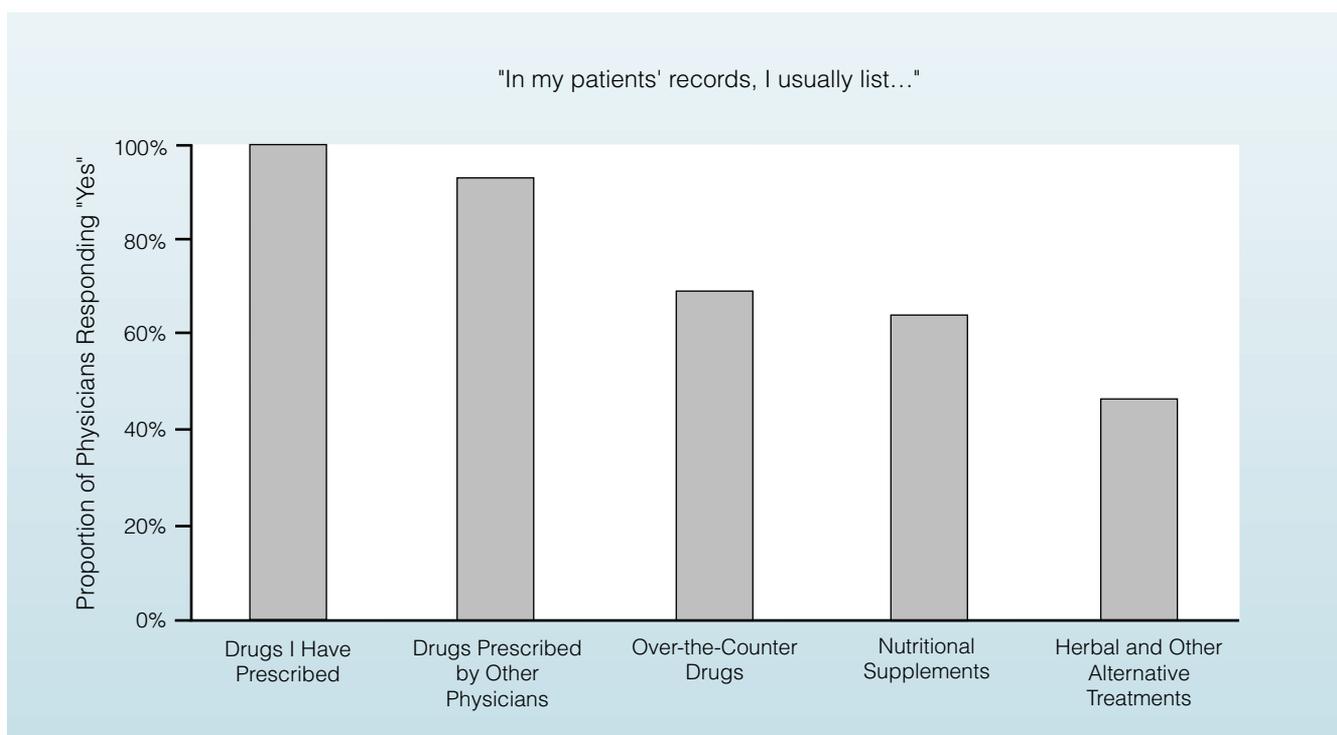
Physicians were asked whether they usually list medications and other substances in the patient record; they could indicate “yes” or “no” in response to questions about a variety of substances. The phrase, “In my patients’ records, I usually. . .” preceded a list of five statements. Specifically, physicians were asked whether they documented 1) drugs that they prescribe, 2) drugs that other physicians prescribe, 3) OTC drugs, 4) herbal and other alternative treatments, and 5) nutritional supplements.

Physicians were also asked to indicate which drugs they review with patients before they prescribe a new treatment. They were asked about four “drug” classes: prescription drugs, OTC drugs, herbal and other alternative treatments, and nutritional supplements.

## Results

A total of 655 primary care physicians responded to the survey (response rate, 36%). Respondents were representative of the survey population with respect to sex, age, medical discipline, years of practice, and region of the United States. No significant differences in response were seen between physicians in internal medicine and those in family practice.

As **Figure 1** shows, almost all physicians reported documenting drugs that they prescribe in the medical record (99.8%). Most physicians (93%) also reported doc-



**FIGURE 1.** Self-reported documentation practices of primary care practitioners.

umenting drugs prescribed by other physicians. However, physicians were much less likely to document use of OTC drugs (68%), nutritional supplements (63%), or herbal and other alternative treatments (47%).

Almost all physicians (99.8%) reported reviewing prescription medications before prescribing a new therapy (Figure 2). However, fewer physicians (86%) reported reviewing OTC drugs before prescribing a new treatment. Even fewer reported reviewing nutritional supplements (45%) or herbal and other alternative treatments (42%).

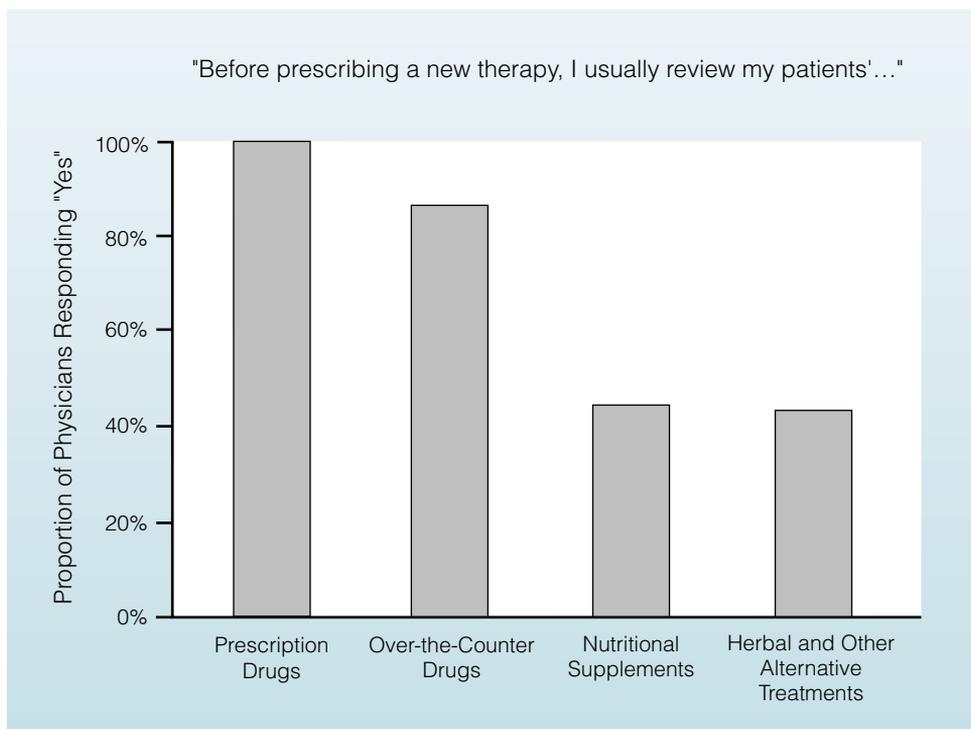
## Discussion

Documentation and comprehensive review of medication use can safeguard against medication-induced morbidity and mortality. Almost all of the physicians responding to our survey (99.8%) reported documenting and reviewing the drugs that they prescribe, and most (93%) reported documenting drugs prescribed by other physicians. This suggests that physicians are making a strong effort to capture prescription drug-related information and are aware of the harm that can result from prescription drug interactions. However, physicians were considerably less likely to document and review OTC drugs, herbal and other alternative treatments, and nutritional supplements (Figure 1), even though use of these substances is increasing.<sup>12-15</sup>

Nonprescription treatments have the potential to produce adverse reactions and interact with prescribed

drugs, and this warrants their inclusion in the documentation and review process.<sup>19, 20, 23, 24</sup> For instance, aspirin and other nonsteroidal anti-inflammatory agents have been repeatedly implicated in drug-related hospital admissions.<sup>25-29</sup> In addition, significant toxic reactions may result from the use of herbal treatments and nutritional supplements, which vary considerably in dose and quality.<sup>12, 13, 19, 20, 23</sup> Without a comprehensive documentation and review process, a physician may overlook the effects of a nonprescription agent as a possible cause of a patient's presenting problem, and this may lead the physician to prescribe additional medications rather than to identify the true cause of the problem.<sup>6</sup> At a minimum, adverse reactions—even if not fully understood by the physician—should be reported to the U.S. Food and Drug Administration's MedWatch.<sup>30</sup>

The combination of self-reported data and a low response rate make it likely that our figures overestimate actual rates of documentation and review in primary care practice. Still, it is clear that physicians more commonly review and document prescribed drugs than nonprescription medication. The format of our survey does not permit a decisive conclusion about why this pattern exists; it may be attributable to limited information about nonprescription medications, lack of awareness of the extent of use of these medications, or underestimation of the importance of reviewing and documenting nonprescription treatments and supplements. However, our findings suggest the need to urge physicians to routinely include nonprescription drugs,



**FIGURE 2. Practitioners reporting that they review various therapies with patients before prescribing a new therapy.**

nutritional supplements, and herbal or other alternative treatments in the review and documentation process to guard against the harmful or unnecessary use of all types of “drug” therapy.

## Take-Home Points

- Use of over-the-counter medications, nutritional supplements, and herbal treatments is increasing, and these agents may have important adverse interactions with prescribed medications.
- We surveyed a sample of primary care physicians from the American Medical Association’s Physician Masterfile to assess how physicians document and review with patients the use of nonprescription substances.
- Although 99.8% of physicians reported that they routinely document prescription medications in the medical record, fewer physicians document over-the-counter medications (68%), nutritional supplements (63%), and herbal medicines (47%).
- Similar patterns were seen in the practice of reviewing use of nonprescription substances before prescribing new therapies.
- The health implications of physician failure to document and review the use of nonprescription substances require further study.

## References

1. Bates DW, Spell N, Cullen DJ, et al. The costs of adverse drug events in hospitalized patients. *JAMA*. 1997;277:307-11.
2. Classen DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients. *JAMA*. 1997;277:301-6.
3. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. *JAMA*. 1998;279:1200-5.
4. Physicians Insurers Association of America. Medication Error Study. June 1993.
5. Phillips DP, Christenfeld N, Glynn LM. Increase in US medication-error deaths between 1983 and 1993. *Lancet*. 1998;351:643-4.
6. Rochon PA, Gurwitz JH. Drug therapy. *Lancet*. 1995;346:32-6.
7. Beard K. Adverse reactions as a cause of hospital admission in the aged. *Drugs Aging*. 1992;2:356-67.
8. Gurwitz JH, Avorn J. The ambiguous relation between aging and adverse drug reactions. *Ann Intern Med*. 1991;114:956-66.
9. U.S. General Accounting Office. Prescription drugs in the elderly: many still receive potentially harmful drugs despite recent improvements. July 1995. GAO/HHS-95-152.
10. Johnson JA, Bootman JL. Drug-related morbidity and mortality. *Arch Intern Med*. 1995;155:1949-56.
11. White paper on elderly health. American Medical Association. *Arch Intern Med*. 1990;150:2459-72.
12. Eliason BC, Myszkowski J, Marbella A, Rasmann DN. Use of dietary supplements by patients in a family practice clinic. *J Am Board Fam Pract*. 1996;9:249-53.

13. Eliason BC, Kruger J, Mark D, Rasmann DN. Dietary supplement users: demographics, product use, and medical system interaction. *J Am Board Fam Pract*. 1997;10:265-71.
14. Marwick C. Growing use of medicinal botanicals forces assessments by drug regulators. *JAMA*. 1995;273:607-9.
15. Astin JA. Why patients use alternative medicine: results of a national study. *JAMA*. 1998;279:1548-53.
16. Britten N, Brant S, Cairns A, et al. Continued prescribing of inappropriate drugs in general practice. *J Clin Pharm Ther*. 1995;20:199-205.
17. Borgsdorf LR, Miano JS, Knapp KK. Pharmacist-managed medication review in a managed care system. *Am J Hosp Pharm*. 1994;51:772-7.
18. Seidel HM, Ball JW, Dains JE, Benedict GW. National Women’s Health Report. Washington, DC: National Women’s Health Resource Center; April 1998; 20.
19. D’Arcy PF. Adverse reactions and interactions with herbal medicines. Part 1. Adverse reactions. *Adverse Drug React Toxicol Rev*. 1991;10:189-208.
20. D’Arcy PF. Adverse reactions and interactions with herbal medicines. Part 2. Drug interactions. *Adverse Drug React Toxicol Rev*. 1993;12:147-62.
21. Cooper JW. Drug-related problems in the elderly patient. *Generations*. *J Am Soc Aging*. 1994;18:19-27.
22. Iliffe S. Medication review for older people in general practice. *J R Soc Med*. 1994;87:11-3.
23. Chan TY. Monitoring the safety of herbal medicines. *Drug Saf*. 1997;17:209-15.
24. U.S. General Accounting Office. Nonprescription drugs: over the counter and underemphasized. GAO/T-PEMD-92-5.
25. Grymonpre RE, Mitenko PA, Sitar DS, Aoki FY, Montgomery PR. Drug-associated hospital admissions in older medical patients. *J Am Geriatr Soc*. 1988;36:1092-8.
26. Colt HG, Shapiro AP. Drug-induced illness as a cause for admission to a community hospital. *J Am Geriatr Soc*. 1989; 37:323-6.
27. Prince BS, Goetz CM, Rihn TL, Olsky M. Drug-related emergency department visits and hospital admissions. *Am J Hosp Pharm*. 1992;49:1696-700.
28. Nelson KM, Talbert RL. Drug-related hospital admissions. *Pharmacotherapy*. 1996;16:701-7.
29. Mannesse CK, Derkx FH, de Ridder MA, Man in’t Veld AJ, van der Cammen TJ. Adverse drug reactions in elderly patients as contributing factor for hospital admission: cross sectional study. *BMJ*. 1997;315:1057-8.
30. Thompson CA. As patients embrace herbal remedies, dearth of scientific evidence frustrates clinicians. *Am J Health Syst Pharm*. 1997;54:2656.

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## Correspondence

Rosalie Guttman, PhD, American Medical Association, 515 North State Street, Chicago, IL 60610; telephone: 312-464-5069; fax: 312-464-5841; e-mail: Rosalie\_Guttman@AMA-ASSN.org.