
REDUCING MEDICATION PROBLEMS OF THE ELDERLY

MANAGEMENT ADVISORY REPORT



OFFICE OF INSPECTOR GENERAL
OFFICE OF EVALUATION AND INSPECTIONS

OCTOBER 1990

REDUCING MEDICATION PROBLEMS OF THE ELDERLY

MANAGEMENT ADVISORY REPORT

**Richard P. Kusserow
INSPECTOR GENERAL**

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PURPOSE

Identify actions which the Department of Health and Human Services can take to improve compliance among the elderly with medication regimens.

BACKGROUND

Medication utilization problems affect the health and quality of life for a substantial number of elderly persons. These problems also result in a significant amount of unnecessary health care spending. Noncompliance with prescription drugs, or the failure of a patient to correctly follow instructions for medication use, contributes significantly to the medication problems of the elderly. Several components of the Department of Health and Human Services have an interest in medication problems of the elderly.

In 1989 under Medicaid, the Federal government and the States spent \$3.7 billion for prescription drugs, which is more than the \$3.4 billion spent for physician services. Approximately 44 percent of Medicaid expenditures for prescription drugs was for the elderly.

In 1989, 1.8 million Medicare beneficiaries were enrolled in prepaid medical plans, many of which provide prescription drug benefits. In both the Medicaid and Medicare programs, an incalculable amount is spent for physician and other medical services necessitated by medication problems.

METHODS

In the past year the Office of Inspector General issued three reports related to medication problems among the elderly. The report "Medicare Drug Utilization Review," issued in April 1989, found that in 1987 an estimated 200,000 older adults were hospitalized due to adverse drug reactions or experienced an adverse drug reaction while hospitalized. In January 1990 we issued two draft reports on the role of the clinical pharmacist in the community setting. "The Clinical Role of the Community Pharmacist" describes new modes of pharmacy services and barriers to their further development. A companion report, "The Clinical Role of the Community Pharmacist: Case Studies," describes the recent experience of several pharmacy practitioners who are developing advanced forms of service including counseling and drug utilization review.

Attached to this document is a fourth report, entitled "Medication Regimens: Causes of Noncompliance." Noncompliance occurs when a patient fails to correctly follow instructions for prescription drug use. The report reviews the scientific literature to determine the extent to which, and the reasons why the elderly may have difficulty complying with their medication regimens. This literature ranges from small, narrowly focused studies on aspects of noncompliance, to book-length discussions on the elderly and medication problems, including noncompliance.

In connection with this study on noncompliance, the OIG has examined (with representatives of PHS, AoA and HCFA) the current programs, policies, and initiatives of those agencies, to identify practical ways to help the elderly adhere to medication regimens.

FINDINGS

Our review of the scientific literature (see attached report number OEI-04-89-89121) revealed that:

Many elderly do not comply with their medication regimens; the consequences are serious.

- Based on a review of many studies of elderly noncompliance, one researcher found that, on average, 55 percent of the elderly are noncompliant with their prescription drug orders. Another pair of researchers suggest that one-third of the elderly always comply, one-third sometimes comply, and one-third never comply with their prescription medication regimens.
- According to a study conducted for the Oregon Department of Human Resources, twenty-three percent of admissions to one nursing home were directly due to patient inability to manage medications at home.
- Over a two-month period, researchers at one large teaching hospital found that hospital admissions for 23 patients, resulting from noncompliance with medications, accounted for 590 hospital days and \$60,000 in avoidable costs.

There are many inter-related reasons for noncompliance.

Variables which affect why the elderly may have difficulties complying with prescription medications fall into four main categories. Although separated into categories, these variables are closely inter-related and may overlap substantially.

- ***Physiological factors:*** Loss of vision or hearing can impede an elderly person's ability to read important information about prescriptions or to hear instructions about a regimen. Mobility limits, type of disease, symptoms of illness, memory loss, depression, and cognitive impairments are other physiological variables that can negatively affect compliance.
- ***Behavioral factors:*** These include social isolation, social and health beliefs, and economic condition. Many elderly people live alone. Several studies have shown that people who live alone more often fail to comply with medication regimens. For those elderly on fixed, minimal incomes, the ability to purchase expensive medications may also be a factor affecting noncompliance.

- *Treatment factors:* Important variables are the duration and complexity of the medication regimen. Without exception, studies have shown that compliance rates decrease when the treatment is long-term and when the regimen includes many different medications which must be taken concurrently. Many elderly people have chronic conditions, and/or multiple conditions. Other treatment factors include the type of medication prescribed, and the patient's perception of the medication.
- *Health Care Provider/Patient Interaction factors:* These include how well the physician, the pharmacist, and the patient communicate with each other. The quality and content of a physician's instructions, the content of a pharmacist's label, and the ability of a patient to ask questions can all affect compliance.

Education is the key to improving compliance.

- A review of the literature showed that compliance-improving programs based on education can have benefit/cost ratios as high as 14:1.
- Several researchers have found that physicians and pharmacists engaging in on-going, compliance-improving education, based on individual patient's needs, is the single best intervention for noncompliant behavior.
- Other means to help improve compliance include devices known as "compliance aids" which can range from simple charts to record medications taken to sophisticated electronic bottle caps with beeping alarms or flashing indicators to indicate when a dose is due.

RECOMMENDATIONS

Public Health Service

The PHS has long had an interest in prescription medication utilization among all segments of the population, including the elderly. In its "Healthy People 2000: National Health Promotion and Disease Prevention Objectives," section 12.6 proposes to: "Increase to at least 75 percent the proportion of primary care providers who routinely review with their patients aged 65 and older all prescribed and over-the-counter medicines taken by their patients each time a new medication is prescribed." In support of this objective we recommend that PHS:

- Promote research on prescription medication compliance, and examine the issue as a possible topic for clinical practice guidelines.
- Evaluate current programs which do or can promote education and training of health care practitioners on improving medication compliance among the elderly. These evaluations should include programs within Area Health Education Centers,

Community and Migrant Health Centers, Geriatric Education Centers, and the Indian Health Service. Programs which lack education and training in medication compliance should be provided the resources to develop such education and training programs especially suited to their clients.

Administration on Aging

Among other activities, the AoA has addressed the issue of mismedication and noncompliance among the elderly by awarding grants and by disseminating information through State and Area Aging Agencies. AoA's "Annual Statement of Goals for 1990 and Beyond," lists several goal areas that relate to the elderly's medication problems. We recommend that AoA:

- Through State and Area Aging Agencies continue to disseminate informational materials and provide educational programs to help the elderly avoid medication problems.
- Encourage medical schools to apply for those health promotion or training funds that could be used to stress the physician's responsibility to improve medication compliance.
- Direct some discretionary grant money to programs aimed at addressing medication compliance problems among minority elderly groups.
- Assess the potential of home care programs to provide compliance-improving services (such as the distribution of medication reminder charts,) and implement such services as appropriate.

Public Health Service and Administration on Aging

Since 1984, representatives of PHS and AoA have met quarterly in the Committee for Joint Health Promotion to discuss health issues related to the elderly. Mismedication in general and noncompliance as a contributor to mismedication should be a priority topic at one or more of these meetings.

Health Care Financing Administration

The direct and indirect costs of prescription medication misuse among the ambulatory elderly, including noncompliance, are often borne by the Medicare and Medicaid programs. Within the Office of Research and Development, HCFA has looked at utilization of prescription medications among nursing home residents. In addition to this work, we recommend that HCFA's Office of Research and Development:

- Initiate demonstration projects in the States which address the problems of noncompliance with prescription medications among the *ambulatory* elderly. These

projects should include test models which would determine which forms of physician, pharmacist, and patient education work best to improve compliance.

COMMENTS ON THE DRAFT REPORT

We received comments from PHS, AoA, HCFA and ASPE on the draft of this report. The comments are included in Appendix A. Responses from all four agencies were favorable. The PHS, AoA and HCFA generally concurred with all OIG recommendations. These agencies also described activities which have been or will be taken to address OIG recommendations.

For example, through the National Institutes of Health (NIH), PHS is funding research directed toward better medication use for older persons. The PHS will also evaluate the education and training services offered to health care practitioners through geriatric education centers (GEC) and area health education centers (AHEC) on the topic of the elderly and prescription drug noncompliance.

The AoA will continue to provide informational materials and training to support the efforts of State and Area Agencies on Aging in the area of proper medication use. The AoA also suggested the possibility of encouraging medical schools to apply for health promotion or training funds appropriate to the subject of the elderly and noncompliance.

Both PHS and AoA have agreed to discuss the topic of the elderly and medication at a National Initiative on Health Promotion and the Aging meeting.

The HCFA is currently funding various projects which address inappropriate use of drugs by both the general population and among nursing home residents. The HCFA will consider including funding for demonstration projects which assess the forms of education most likely to improve compliance with prescription medication regimens.

We appreciate the agencies' supportive review of the report and its recommendations.

APPENDIX A

PHS, AoA, HCFA, and ASPE Comments

JUL 16 1990

DATE:

TO: Richard P. Kusserow
Inspector General

FROM: U.S. Commissioner on Aging

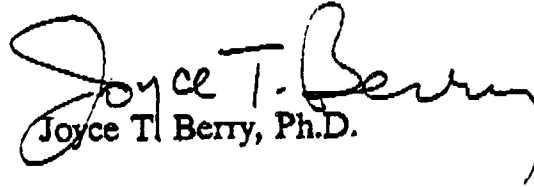
SUBJECT: Comments on OIG Draft Report: "Reducing Medication Problems of the Elderly," OEI-04-89-89122

This is in response to your memorandum of June 21, 1990, which requested comments from the Administration on Aging (AoA) on this report. I am pleased to have this opportunity and would offer the following comments:

- o The report is well reasoned and contains a strong factual basis for its findings. AoA concurs with the overall recommendation that education is the key to improving compliance with proper medication regimes. As the report notes, many of the AoA sponsored health promotion and training activities follow this premise.
- o With regard to the specific recommendations addressed to AoA, AoA will continue to provide informational materials and training to support the efforts of State and Area Agencies on Aging in the area of proper use of medication. It may interest you to know that each of the ten AoA Regional Offices will be convening regional health promotion meetings over the coming 15 months. The issue of appropriate use of medication is among the issues which will be addressed by these conferences. In addition, AoA will seriously consider your recommendations as we begin the process of developing the priorities for our FY 1991 discretionary announcement.
- o Your second recommendation calls for AoA to "redirect some of the grant money given to pharmacy colleges to medical schools" for projects which stress the physician's responsibility to improve patient compliance. I would point out that there are no funds specifically earmarked to pharmacy colleges. AoA will consider the possibility of encouraging medical schools to apply for such health promotion or training funds as may be appropriate for this subject area.
- o In any revisions which you make to your recommendations you may wish to consider the potential role of the Geriatric Education Centers (GECs) funded by the Bureau of Health Professions, Health Resources Administration, Public Health Service. Since each GEC must have a medical school component, they might be in a position to make a contribution in this area.

- o You have recommended that AoA and PHS raise the issue of medication compliance in our quarterly meetings on our National Initiative on Health Promotion and the Aging. We have initiated discussions with the Surgeon General's office to resume these meetings and will propose that this topic be included in the discussions.

I hope that you find these comments helpful.


Joyce T. Berry, Ph.D.

Memorandum

AUG 22 1990

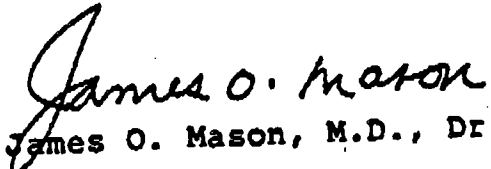
Assistant Secretary for Health

OIG Draft Report "Reducing Medication Problems of the Elderly,"
OEI-04-89-89122

Inspector General

Attached are the PHS comments on the subject OIG draft report.

We concur with the three recommendations addressed to the Public Health Service and we are taking actions to implement them.


James O. Mason, M.D., Dr.P.H.

Attachment

COMMENTS OF THE PUBLIC HEALTH SERVICE ON THE OFFICE
OF INSPECTOR GENERAL'S (OIG) DRAFT REPORT
"REDUCING MEDICATION PROBLEMS OF THE
ELDERLY," OEI-04-89-89122

OIG Recommendation

We recommend that PHS:

- o Promote research on prescription medication compliance and examine the issue as a possible topic for clinical practice guidelines.

PHS Comment

We concur. The National Institutes of Health (NIH) has issued a request for application (RFA) entitled "Pharmacology in Geriatric Medicine" which solicits a comprehensive range of research directed toward better medication use for older persons. The research includes techniques to improve drug prescribing, avoiding adverse drug reactions, and improved pharmacologic treatments for common causes of frailty and disability. In that regard, research into improving prescription medication compliance is an important part of this effort. One hundred and sixteen applications were received by NIH and are currently under review. NIH plans to award approximately eight grants totaling some \$2 million in fiscal year (FY) 1991.

In addition, the Agency for Health Care Policy and Research (AHCPR) is currently funding a major feasibility study, "Geriatric Drug-Related Hospitalization," which will quantify drug-related adverse events associated with hospital admissions of the elderly. AHCPR expects to sponsor a followup study that will include patient compliance as a central element.

AHCPR is also facilitating the development of practice guidelines in seven clinical areas. As it develops these guidelines, AHCPR will examine the issue of medication compliance in the three clinical areas in which medication is a central element of the treatment. These areas include: 1) diagnosis and treatment of benign prostatic, 2) urinary incontinence in the adult, and 3) pain management.

OIG Recommendation

- o Evaluate current programs which do or can promote education and training of health care practitioners on improving medication compliance among the elderly. These evaluations should include programs within area health education centers, community and migrant health centers, geriatric education centers, and the Indian Health

Service. Programs which lack education and training in medication compliance should be provided the resources to develop such education and training programs especially suited to their clients.

PHS Comment

We concur. In FY 1991 the Health Resources and Services Administration (HRSA) will ascertain the extent to which the current geriatric education centers (GEC) and area health education centers (AHEC) provide education and training of health care practitioners on improving medication compliance among the elderly. In FY 1992, based on the results of the evaluation, HRSA will consider modifying the funding priority of the AHEC Program to integrate educational offerings on the topic of pharmacogeriatrics and patient noncompliance for practicing health professionals. The above actions are contingent upon the continued funding of the AHEC and GEC Programs. Currently, these programs are not included in the President's Budget for FY 1991.

Later this year, HRSA will distribute copies of the final version of this OIG report to its community and migrant health centers (C/MHCs) and strongly encourage them to make all health providers aware of this problem and obtain continuing professional education as needed. In addition, by the end of FY 1991, PHS will have developed a new site-visit protocol for C/MHCs which will help to ascertain, at that level, the need for education and training of practitioners. Site-visit reviewers can then make appropriate recommendations to the C/MHCs.

The Indian Health Service (IHS) has the largest direct health care program in PHS. There is an increasing number of elderly patients being seen in IHS hospitals and clinics, and pharmacists are extensively involved in counseling all patients on medication compliance. During FY 1991 IHS will review the content of its pharmacy training programs and include material to improve medication compliance in the elderly. IHS will also complete an instructional video with supplementary teaching materials which is designed to train pharmacists and other health care providers to determine patients' understanding of their medication. This will have specific application in medication compliance in the elderly. The instructional video will be available for distribution and use in all IHS facilities by the end of the first quarter of FY 1991. The video will also be made available to all major professional organizations in pharmacy as well as all colleges of pharmacy in the United States.

OIG Recommendation

Since 1984, representatives of PHS and the Administration on Aging (AOA) have met quarterly with the Committee for Joint Health Promotion to discuss health issues related to the elderly. Mismedication in general and noncompliance as a contributor to mismedication should be a priority topic at one or more of these meetings.

PHS Comment

We concur. This topic will be taken up at the next meeting of the Subcommittee.

Technical Comments

Page 3 - "Economic condition," which is included as a behavioral factor, might be better represented if it were separately categorized as a factor.

Page 4 - The goal to "reduce the incidence of adverse drug reaction among people age 65 and older to 8.5 per 100,000" was included in the public review draft of the Year 2000 Objectives for the Nation. However, it is being removed from the final draft which is to be published on September 6, 1990.

AUG 10 1990

Memorandum

Gail R. Wilensky, Ph.D. GW
Administrator

ect OIG Draft Report: "Reducing Medication Problems of the
Elderly" -OEI-04-89-89122

The Inspector General
Office of the Secretary

We have reviewed the subject draft report which discusses the extent to which and the reasons why the elderly may have difficulty complying with their medication regimens.

The report recommends that HCFA should initiate demonstration projects in the States which address the problems of noncompliance with prescription medication regimens among the ambulatory elderly. These projects should include test models which would determine which forms of physician, pharmacist, and patient education work best to improve compliance.

HCFA is currently pursuing a number of research and demonstration projects that are studying methods to reduce the inappropriate use of drugs by the elderly. Examples of these projects include the following:

- The University of Minnesota has developed a taxonomy of inappropriate use of medications as a result of a study of psychotropic drug use among Medicare beneficiaries who are nursing home residents. In addition, Minnesota is currently involved in research which will identify, classify, and evaluate alternate approaches to Drug Utilization Review in private sector health insurance plans.
- Brandeis is studying the existing Medicaid drug data in order to assess its usefulness for enhancing HCFA's understanding of the quality and effectiveness of drug utilization among Medicaid populations.

- The University of Wisconsin and Systemetrics are studying medication use in quality of care indicators for nursing home patients and drug utilization and expenditures among ambulatory Medicaid recipients, respectively. Using the Pennsylvania Pharmaceutical Assistance Survey data, Pennsylvania State University is analyzing patterns of pharmaceutical use and adverse drug reactions.

With the repeal of the drug benefit under Medicare, we are reassessing our research and demonstration priorities in the drug area. As we develop our strategy, we will consider OIG's suggestion that we include demonstration efforts to assess the forms of education most likely to improve compliance with prescribed medication regimens.

Please advise us whether you agree with our position on the report's recommendation at your earliest convenience.

Washington, D.C. 20201

AUG 6 1990

MEMORANDUM

TO : Richard P. Kusserow
Inspector General

FROM : Assistant Secretary for Planning and Evaluation

SUBJECT: OIG Report "Reducing Medication Problems of the
Elderly" *04-89-89122*

ASPE has no comments to make about the report "Reducing Medication Problems of the Elderly," except to commend the OIG for a fine piece of work.


Martin H. Gerry