

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

**PREPROCEDURE REVIEW COSTS FOR
CAROTID ENDARTERECTOMY**

MANAGEMENT ADVISORY REPORT



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EXECUTIVE SUMMARY

PURPOSE

To inform the Health Care Financing Administration on the status of current work relating to carotid endarterectomy and to report the results of our review of the cost and estimated savings of the Peer Review Organization (PRO) preprocedure review for carotid endarterectomy.

BACKGROUND

Carotid endarterectomy is a surgical procedure designed to reduce occlusion or blockage of one or both internal carotid arteries which provide the primary blood supply to the brain. The procedure involves dissecting the neck below the ears, cutting the carotid arteries open lengthwise, and scooping out the accumulated plaque. It entails considerable risks and side effects.

Carotid artery occlusion can also be treated non-surgically. The most common non-surgical treatment is antiplatelet medication, usually aspirin.

Since its 1953 development, endarterectomy treatment of carotid arteriosclerotic occlusive disease has become one of the most common vascular surgery procedures. There has been much debate about its efficacy, indications, and side effects.

In each State, the Health Care Financing Administration (HCFA) contracts with a Utilization and Quality Control Peer Review Organization, commonly known as a PRO. A PRO preprocedure review was required for all carotid endarterectomies covered by Medicare prior to October 1, 1991.

The HCFA has now eliminated required preprocedure review for carotid endarterectomy. The PROs retain the option to review this procedure if they can prove to HCFA it will improve quality of care and be cost-effective.

This management advisory report informs HCFA of the status of our inspection on the cost and estimated savings of the PRO preprocedure review process for carotid endarterectomy.

METHODOLOGY

We collected information from 47 PRO officials representing all 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands during March 1991. This information included the number of preprocedure reviews and denials. From HCFA, we obtained a computation of total cost per negotiated PRO review type and the Medicare allowed reimbursements for carotid endarterectomy.

FINDINGS

- ▶ During 1990, PRO preprocedure review cost \$1.4 million and saved an estimated \$800,000 from 90 surgery denials (of 53,528 requests) for carotid endarterectomy.
- ▶ However, PROs in 9 States did achieve cost savings estimated at \$382,000 for Medicare through preprocedure review.

CONCLUSION

As the PROs performed preprocedure reviews for carotid endarterectomies, their costs exceeded estimated savings from denials. However, some PROs did achieve savings. The HCFA's decision to eliminate the across-the-board requirement for preprocedure review for this surgery, while still allowing individual PROs to target reviews, is consistent with these findings.

We are continuing our work on carotid endarterectomy. The low number of PRO denials, which accounts for the lack of savings from preprocedure review, could be due to poor performance by PROs or a low incidence of unnecessary surgery. The latter could, in turn, result from the sentinel effect of PRO reviews.

Future OIG reports will examine the PROs' review criteria as well as scientific studies on the need for and efficacy of carotid endarterectomy. We will consider whether any kind of special reviews, including perhaps more effective forms of PRO preprocedure review, are warranted.

INTRODUCTION

PURPOSE

To inform the Health Care Financing Administration on the status of current work relating to carotid endarterectomy and to report the results of our review of the cost and estimated savings of the Peer Review Organization (PRO) preprocedure review process for carotid endarterectomy.

BACKGROUND

Carotid endarterectomy is a surgical procedure designed to reduce occlusion or blockage of one or both internal carotid arteries which provide the primary blood supply to the brain. The procedure involves dissecting the neck below the ears, cutting the carotid arteries open lengthwise, and scooping out the accumulated plaque. It entails considerable risks and side effects.

Carotid artery occlusion can also be treated non-surgically. The most common non-surgical treatment is antiplatelet medication, usually aspirin.

Since its 1953 development, endarterectomy treatment of carotid arteriosclerotic occlusive disease has become one of most common vascular surgery procedures. There has been much debate about its efficacy, indications, and side effects. Some studies find that carotid endarterectomy produces more favorable outcomes than medical treatment, but others find no difference between surgical and non-surgical therapy.

PRO Preprocedure Review

In each State, HCFA contracts with a Utilization and Quality Control Peer Review Organization, commonly known as a PRO, to review the appropriateness and quality of surgery performed on Medicare beneficiaries. The HCFA administers the Medicare program and has regulatory oversight of PRO activities. For each covered procedure, the PRO develops its own review criteria and diagnostic indicators.

A preprocedure review was required for all carotid endarterectomies covered by Medicare prior to October 1, 1991. The HCFA has now eliminated required preprocedure review for carotid endarterectomy.¹ The PROs retain the option to review this procedure if they can prove to HCFA "the productivity measures (e.g., cost/benefit, reduction of number of quality problems) of the proposed additional work exceeds the productivity measures of random review."

¹The HCFA Directed Change Order 91.13: Cessation of Preadmission/Preprocedure Review.

We have initiated a series of studies relating to carotid endarterectomy. First, we examined the cost and estimated savings of the PRO preprocedure review process for carotid endarterectomy. Second, we are comparing the criteria and diagnostic indicators used by PROs and determining if denials are related to PRO criteria. Third, we are comparing the levels of unnecessary surgery for carotid endarterectomy identified by the PROs to levels reported in scientific studies.

We have not analyzed the deterrent or "sentinel effect" of preprocedure review since HCFA is now doing longitudinal studies to evaluate the sentinel effect. The sentinel effect causes physicians to recommend fewer unnecessary surgeries because they know their recommendations face peer review.

This management advisory report focuses on the results of our inspection on the cost and estimated savings of the PRO preprocedure review process for carotid endarterectomy.

METHODOLOGY

We collected information from 47 PRO officials representing all 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands during March 1991. In this report, we refer to these jurisdictions as 53 States.

The information requested from the PROs included the number of preprocedure requests, reviews, and denials (see Appendix A).

In addition, we obtained a computed total cost per negotiated PRO review type from HCFA. Our calculations use the ambulatory review classification which is a HCFA negotiated reimbursement category. According to HCFA's Health Care Standards and Quality Bureau, an ambulatory review costs \$26.22. This includes \$9.02 in variable cost and \$17.20 in fixed cost. We also obtained the Medicare allowed reimbursements for Parts A and B from HCFA data bases. We used this information, together with data provided by the PROs, to analyze the cost of preprocedure reviews.

FINDINGS

THE PRO PREPROCEDURE REVIEW RESULTS IN FEW DENIALS AND IS COSTLY.

- ▶ *The PROs rarely deny preprocedure requests.*

The PROs report 90 carotid endarterectomies were denied out of 53,528 preprocedure requests in 1990 (.17 percent). It is important to note that 29 States reported no denials. For more information on denials by State see Appendix A.

- ▶ *The PROs spent \$1.4 million to save an estimated \$800,000 from surgery denials.*

During 1990, the PROs processed 53,528 preprocedure review requests for carotid endarterectomy. According to HCFA, each preprocedure review costs \$26.22. Thus, it cost \$1,403,504 in 1990 to process all carotid endarterectomy preprocedure review requests. If all 90 denials were upheld, the cost savings from these unnecessary surgeries were \$792,720. This is based on the cost estimate of \$8,808 representing the average allowed Medicare charges (Parts A and B) using the HCFA 1989 Medical Provider Analysis and Review (MEDPAR) file and the Part B Medicare Annual Data (BMAD) file.²

THE PROS IN NINE STATES ACHIEVED SAVINGS FOR MEDICARE.

- ▶ *In nine States, carotid endarterectomy preprocedure review saved an estimated \$382,000 in Medicare expenditures.*

Because a carotid endarterectomy is so costly, denying a few unnecessary procedures can quickly add up savings. If only 0.3 percent of requests are found to be unnecessary and denied, the PRO preprocedure review breaks even. In States with a low request volume, even one annual denial can produce cost savings. In 1990 for example, two (of these nine) States denied only one request yet demonstrated savings.

The chart on the next page demonstrates how PROs in 9 States avoided over \$500,000 in Medicare expenditures (with a net savings of about \$382,000) by denying only 59 of 5,248 requests during 1990.

²Cost estimate prepared by OIG/OEI Technical Support Staff.

PREPROCEDURE REVIEW COSTS

PRO FOR	NUMBER OF REQUESTS	PROCESSING COSTS	NUMBER OF DENIALS (% OF REQUESTS)	MEDICARE AMOUNT IF PERFORMED	NET SAVINGS
ARIZ.	542	\$14,211	31 (5.7)	\$273,048	\$258,837
COLO.	284	7,446	4 (1.41)	35,232	27,786
IOWA	726	19,036	6 (0.83)	52,848	33,812
NEBR.	667	17,489	2 (0.30)	17,616	127
S. DAK.	164	4,300	1 (0.61)	8,808	4,508
TENN.	1,653	43,342	8 (0.48)	70,464	27,122
UTAH	214	5,611	1 (0.47)	8,808	3,197
VT.	55	1,442	2 (3.64)	17,616	16,174
VA.	943	24,725	4 (0.42)	35,232	10,507
TOTALS	5,248	\$137,602	59 (1.12)	\$519,672	\$382,070

► ***The PROs representing the other States did not achieve savings.***

Each of the PROs representing the other States had a denial rate of less than 0.3 percent, the point at which preprocedure review costs equal savings from denials. The 43 PROs denied a total of 31 requests. One PRO did not provide denial information.

The State breakdown of denials by these PROs was very uneven. There were no denials in 29 States. Nine States had one denial each. Two States had two each. One State had seven, one State had six and another State had five.

CONCLUSION

As the PROs performed preprocedure reviews for carotid endarterectomies, their costs exceeded estimated savings from denials. However, some PROs did achieve savings. The HCFA's decision to eliminate the across-the-board requirement for preprocedure review for this surgery, while still allowing individual PROs to target reviews, is consistent with these findings.

We are continuing our work on carotid endarterectomy. The low number of PRO denials, which accounts for the lack of savings from preprocedure review, could be due to poor performance by PROs or a low incidence of unnecessary surgery. The latter could, in turn, result from the sentinel effect of PRO reviews. Future OIG reports will examine the PROs' review criteria as well as scientific studies on the need for and efficacy of carotid endarterectomy. We will consider whether any kind of special reviews, including perhaps more effective forms of PRO preprocedure review, are warranted.

We look forward to the completion of HCFA's studies regarding the sentinel effect.

APPENDIX A

PRO Preprocedure Requests and Denials for Carotid Endarterectomy in 1990, by State

<u>PRO for</u>	<u>Number of Requests</u>	<u>Number of Denials</u>	<u>Percent Denied</u>
Alabama	1,074	n/a*	n/a
Alaska	26	0	0.00
Arkansas	801	0	0.00
Arizona	542	31	5.72
California	5,043	6	0.12
Colorado	284	4	1.41
Connecticut	444	0	0.00
District of Columbia	98	0	0.00
Delaware	130	0	0.00
Florida	3,869	0	0.00
Georgia	2,941	1	0.03
Hawaii	102	0	0.00
Idaho	133	0	0.00
Illinois	2,230	0	0.00
Indiana	1,504	0	0.00
Iowa	726	6	0.83
Kansas	1,325	0	0.00
Kentucky	963	0	0.00
Louisiana	1,356	1	0.07
Maine	231	0	0.00
Massachusetts	762	1	0.13
Maryland	870	1	0.11
Michigan	2,598	7	0.27
Minnesota	364	0	0.00
Mississippi	658	0	0.00
Missouri	1,660	2	0.12
Montana	161	0	0.00
Nebraska	667	2	0.30
Nevada	289	0	0.00
New Hampshire	137	0	0.00
New Jersey	1,390	0	0.00
New Mexico	127	0	0.00
New York	1,604	1	0.06
North Carolina	1,304	1	0.08
North Dakota	127	0	0.00
Ohio	2,922	5	0.17
Oklahoma	552	0	0.00
Oregon	786	1	0.13
Pennsylvania	2,651	0	0.00
Puerto Rico	26	0	0.00
Rhode Island	130	0	0.00

<u>PRO for</u>	<u>Number of Requests</u>	<u>Number of Denials</u>	<u>Percent Denied</u>
South Carolina	460	1	0.22
South Dakota	164	1	0.61
Tennessee	1,653	8	0.48
Texas	3,639	2	0.05
Utah	214	1	0.47
Vermont	55	2	3.64
Virginia	943	4	0.42
Virgin Islands	0	0	0.00
Washington	1,138	1	0.09
West Virginia	674	0	0.00
Wisconsin	935	0	0.00
Wyoming	46	0	0.00
National Total	53,528	90	0.17

All data is directly from PRO interviews conducted during this inspection. Some PROs were able to provide data for calendar year 1990 as requested; others choose to provide data for Third Scope of Work contract year 1990.

* We use the designation n/a to indicate that data was not available at the time of our interview.