In the Literature

EVALUATING NATIONAL GUIDELINES FOR PREVENTION OF CARDIOVASCULAR DISEASE IN PRIMARY CARE

Tom Marshall, Ph.D.

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For more information about this study, contact:

Tom Marshall, Ph.D.
Department of Public Health and Epidemiology
University of Birmingham
E-MAIL t.p.marshall@bham.ac.uk

or

Mary Mahon
Public Information Officer
The Commonwealth Fund
TEL 212-606-3853
E-MAIL mm@cmwf.org

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THE COMMONWEALTH FUND
ONE EAST 75TH STREET
NEW YORK, NY 10021-2692
TEL 212.606.3800
FAX 212.606.3500
E-MAIL cmwf@cmwf.org
http://www.cmwf.org

National guidelines for prevention of cardiovascular disease (CVD) offer primary care physicians a roadmap for screening high-risk patients and recommending preventive treatments. But which patients should be considered "high-risk" and screened? Of those, whose conditions merit treatment? And which interventions yield the greatest preventive benefit at the lowest cost?

In the study, "Evaluating National Guidelines for Prevention of Cardiovascular Disease in Primary Care" (*Journal of Evaluation in Clinical Practice*, Oct. 2005), former Commonwealth Fund Harkness Fellow Tom Marshall, Ph.D., quantifies differences among national guidelines for preventing CVD in Australia, Canada, New Zealand, the United Kingdom, and the United States and reveals wide variance in the overall costs and health consequences of the policies. The most cost-effective guidelines, Marshall found, focus on older rather than younger patients and emphasize aspirin and early treatment of high blood pressure.

Do You Get What You Pay For?

Marshall applied each of the five national sets of guidelines to a model population of 2,000 individuals age 16 and older over a simulated five-year period. Because the study controlled for variations in treatment costs, benefits, age, and other variations, the differences in outcomes and costs are entirely the result of the different guidelines.

Under all the guidelines, the proportion of individuals eligible for treatment rises with age. Canadian guidelines identify the highest proportion, and New Zealand guidelines the lowest. Benefits, however, are similarly aligned: the Canadian guidelines prevented the most CVD, the New Zealand guidelines the least.

Costs under the New Zealand guidelines are much lower than those of other countries, particularly the Canadian guidelines. Marshall found that much of the difference is the cost of patient assessment, with New Zealand assessing no patients under 35 and few under 55. Assessment costs accounted for less than 10 percent of total costs in the New Zealand guidelines. Under the other country guidelines, these costs were four to six times higher.

The Best of Both Worlds

To keep costs low and benefits high, Marshall says, recommendations for screening and treatment should focus heavily on older patients. Across the board, the greatest preventive benefit at the lowest cost is found in people age 75 and older, while the lowest ratio of benefit to cost is found in those under age 35.

Additionally, under most guidelines the cost per cardiovascular episode prevented is lowest with aspirin treatment. In fact, in every set of guidelines, aspirin and initial hypertensive treatment account for more than half of the preventive benefits. If New Zealand's guidelines were to adopt the U.S. Preventive Services Task Force recommendations on the use of aspirin, Marshall says, New Zealand would rise to the second-highest rate of cardiovascular episodes prevented while remaining the most cost-effective of the group.

Still, when it comes to CVD interventions, one size decidedly does not fit all. Aspirin, though an appealingly low-cost course of treatment, still must be prescribed with caution. Australia's guidelines, which recommend aspirin for everyone with high cholesterol levels, could be harmful to the population segment ages 16 to 24. The guidelines are intended to benefit people who have high cholesterol in their family—but since these individuals account for only 0.2 percent of the population, the cost-effectiveness of aspirin takes a back seat to the risk of major bleeding.

Policy Implications

Once on the books, guidelines can become accepted health policy. Adherence to them is often used as a quality indicator and is sometimes linked to incentive payments. Guidelines, therefore, have implications for health policy issues ranging from accurately reporting the number of citizens with a particular condition to structuring health care benefit plans.

In spite of the important role of guidelines, however, a basic cost-benefit analysis is rarely part of the process of establishing them.

If guidelines are not to become simply marketing tools specialists use to increase the portion of health care resources allocated to their area, they must demonstrate that the costs of their recommendations are reasonably well aligned with the benefits yielded. The analysis demonstrated in this study—neither complex nor expensive to undertake—offers the opportunity to do that.

Total Number of Cardiovascular Events Prevented per 5 Years in a Sample of 2,000 Adults Under Five National Guidelines

Age group	Australia	Canada	New Zealand	United Kingdom	United States
16–24	0.0	0.0	0.0	0.0	0.0
25–34	0.1	0.3	0.0	0.0	0.2
35–44	0.7	1.4	0.1	0.2	1.1
45–54	2.9	5.2	1.3	2.4	4.0
55–64	6.2	7.8	4.4	5.6	6.2
65–74	9.8	9.6	8.4	9.3	8.1
75–84	10.7	9.6	10.8	8.5	8.5
85+	4.9	4.1	4.9	4.1	4.3
All ages	35.4	38.1	30.0	30.1	32.4

Cost per Cardiovascular Disease Event Prevented in a Sample of 2,000 Adults Under Five National Guidelines

Age group	Australia	Canada	New Zealand	United Kingdom	United States
16–24	–$22,311,300	$7,474,300	—	—	$12,661,000
25–34	2,639,900	1,324,100	—	$5,933,100	1,522,500
35–44	624,600	440,100	$187,700	1,269,500	404,000
45–54	213,000	162,900	129,500	208,400	138,600
55–64	111,400	97,800	82,600	97,600	86,600
65–74	73,800	71,000	60,900	71,900	67,200
75–84	57,000	52,800	50,700	55,200	51,100
85+	49,900	46,400	45,600	49,000	46,200
All ages	107,400	108,300	61,500	99,200	94,800

Source for both tables: T. Marshall, "Evaluating National Guidelines for Prevention of Cardiovascular Disease in Primary Care," *Journal of Evaluation in Clinical Practice,* Oct. 2005 11(5):452–61.