ELSEVIER

Women's Health Issues 13 (2003) 115–121

WOMEN'S HEALTH ISSUES

THE JACOBS INSTITUTE OF WOMEN'S HEALTH REPORT ON THE PREVENTION OF HEART DISEASE IN WOMEN: FINDINGS AND RECOMMENDATIONS FROM THE "WOMEN AND HEART DISEASE: PUTTING PREVENTION INTO PRIMARY CARE" CONFERENCE

Sharonne N. Hayes, MD, FACC[a], Carol S. Weisman, PhD[b], and Apryl Clark, MHSA[c,*]

[a]*Women's Heart Clinic, Mayo Clinic, Rochester, Minnesota*
[b]*Department of Health Evaluation Sciences and Obstetrics and Gynecology, Penn State College of Medicine, Hershey, Pennsylvania*
[c]*Jacobs Institute of Women's Health, Washington, DC*

Received 1 July 2003; accepted 1 July 2003

Introduction

The Jacobs Institute of Women's Health convened an invitational, multidisciplinary conference, "Women and Heart Disease: Putting Prevention into Primary Care," on December 4 and 5, 2002, in Washington, DC.† The purpose of the conference was to present key findings from research papers commissioned specifically for the conference and to formulate recommendations based on these findings for improving the prevention of heart disease in women's primary care. This report summarizes the background and scope of the conference, the major findings, and the key recommendations.

Background and Scope

Heart disease is the leading cause of death in U.S. women and a major cause of mortality and disability.[1,2] Although the diagnosis and management of coronary heart disease (CHD) has improved markedly in recent decades, women have not seen as dramatic a decrease in mortality, and there is evidence that the burden of heart disease for women may actually be increasing.[3] The reasons for this gender disparity are not well understood. CHD is considered to be a largely preventable condition, but women are generally unaware of their risk for heart disease and receive fewer preventive services than recommended.[4–6]

While more research on women and heart disease is needed, evidence already exists for the efficacy of risk factor reduction in women for both primary and secondary prevention of heart disease. A diet rich in fruits, vegetables, and low-fat dairy foods has been shown to decrease blood pressure in hypertensive women.[7] Lipid lowering therapy reduces the risk of heart disease mortality by one-quarter in women with prior coronary heart disease.[8] Nevertheless, modifiable risk factors in women are frequently not adequately addressed in clinical practice.

Women's health care is complex. Reproductive health services and other basic health services are frequently provided by multiple health care professionals and in different settings. Consequently, women often rely on several different types of health care professionals for primary care services.[9] In national surveys, between 37% and 42% of nonelderly women (ages 18 to 64) report that they see both a generalist physician (family practitioner or internist) and an obstetrician-gynecologist for regular health care.[10] Many women also receive some preventive services from advanced practice nurses. Improving prevention in women's primary care therefore re-

* Correspondence to: Apryl Clark, MHSA, Project Director, Jacobs Institute of Women's Health, 409 12th Street, SW, Washington, DC 20024.

E-mail: aclark@acog.org

† The conference was sponsored by Pfizer Inc. Women's Health, the Fannie E. Rippel Foundation, and the Agency for Healthcare Research and Quality (AHRQ). The conference was co-chaired by Sharonne N. Hayes, MD, FACC, Director of the Mayo Clinic Women's Heart Clinic and Carol S. Weisman, PhD, Professor of Health Evaluation Sciences and Obstetrics and Gynecology at Pennsylvania State University. The Steering Committee members assisting in the development of the conference and conferencepresenters are listed in Appendix 1.

1049-3867/03 $-See front matter.
doi:10.1016/S1049-3867(03)00055-0

quires modifying and coordinating the efforts of multiple types of health professionals. Because over 90% of women make at least one health care visit each year,[10] a key point of intervention for women's risk reduction and prevention of heart disease is the primary care setting.

For purposes of this conference, women's primary care was defined as encompassing all of the health care professionals and settings used by women for regular and preventive health care. The effectiveness of strategies, diagnostic tests, and treatments not currently recommended for use in primary and secondary prevention and evidence regarding effectiveness of community-based strategies for prevention were beyond the scope of this conference.

Major Findings

The goal of the conference was to engage a diverse group of experts—including health care professionals, researchers, advocates, and policymakers—in examining the state of the evidence and drafting recommendations to improve the primary and secondary prevention of heart disease for women in the primary care setting. The conference provided updates on the epidemiology of heart disease in women and on the diagnosis and management of CHD in women from an evidence report commissioned by the Agency for Healthcare Research and Quality (AHRQ) and conducted by Grady and colleagues.[11] Three papers, published in this issue of *Women's Health Issues*, were commissioned by the Jacobs Institute to address the state of the evidence for key topics related to prevention of heart disease in primary care:

- Prevention of heart disease in women through health behavior change
- Physician adherence to preventive cardiology guidelines for women
- Quality of care performance measures and quality improvement strategies related to heart disease in women

The key findings of the conference, based on presentations, commissioned papers, and discussion are:

1. Counseling women for tobacco cessation is recommended for use in the primary care setting, but there is a lack of research on the effectiveness for physical activity and nutrition counseling in these settings.

Whitlock and Williams[12] examined whether counseling for behavior change related to smoking, physical activity, and healthy diet is effective in women through primary care interventions. The literature on smoking cessation counseling provides the best evidence base for the effectiveness of primary care counseling on behavior change. Primary care smoking cessation counseling is recommended for and is equally efficacious in both women and men, although some gender differences in preferences for specific methods of quitting have been identified. For physical activity and healthy diet, there is insufficient evidence to recommend counseling to all women on a routine basis, at least utilizing practices typically available in the primary care setting.[13,14] However, there is sufficient evidence to recommend intensive behavioral dietary counseling for women with hyperlipidemia and other known risk factors for cardiovascular disease.

More research is needed to clarify the most effective and efficient means of providing these interventions in primary care. It is important that effectiveness be studied in diverse settings, including community-based, rural and Medicaid managed care plans, as these are likely to differ from private health plans, and many women get their care in these settings. Finally, preventive counseling might be provided optimally by multidisciplinary teams, rather than individual clinicians, and through multiple communication channels in addition to face-to-face encounters with patients.

2. Multiple barriers prevent health care professionals' adherence to clinical practice guidelines related to heart disease, including lack of time, lack of familiarity or agreement with guidelines, low self-efficacy, absence of system supports for preventive counseling, inadequate insurance coverage for behavioral services, and fragmentation of women's primary care.

Cabana and Kim[15] applied a framework for describing challenges in implementing clinical practice guidelines for prevention of CHD in women in primary care. Because the American Heart Association/American College of Cardiology "Guide to Preventive Cardiology for Women"[16] is a collection of recommendations for several areas of clinical practice, different barriers to physician adherence are likely for each recommendation. Specialty differences in guideline adherence among physicians who provide primary care to women also are likely. To date, there is no comprehensive data on physician knowledge, attitudes, or practices related to these guidelines. In addition, health care professionals often have limited time to address the range of issues required to provide optimal patient care during a standard primary care visit, making it hard to comply with all preventive recommendations. A recent study estimated that 7.4 hours per working day are needed for a physician to provide the preventive services recommended by the U.S. Preventive Services Task Force.[17] Research to assist health care professionals in preventive services prioritization for individual patients is needed.

Nurses also play an important role in primary care. The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) recently published guidelines for nurses in the primary prevention of cardiovascular disease in women.[18] A primary objec-

tive is to increase the knowledge and awareness of nurses about cardiovascular disease, primary prevention, and risk reduction strategies. Selected nurses have been trained in use of these guidelines, and a preliminary evaluation indicates that the guidelines have been successful in increasing their knowledge of cardiovascular disease in women. Evaluation efforts to measure improvements in practice are ongoing.

The organizational and system barriers to health care professionals' adherence to evidence-based practice guidelines include time pressures, the lack of appropriate or gender-specific educational materials for health care professionals and patients, the absence of computerized medical records or patient reminder systems, lack of reimbursement for counseling services, inadequate insurance coverage for behavioral programs (e.g., exercise classes), and the lack of community-based organizations for referrals for behavioral programs.

3. Despite research that confirms gender disparities in prevention and treatment of heart disease, efforts to improve quality of care for women are hampered because performance measures are not available by gender.

Bird and colleagues[19] described recent work showing gender differences in quality of care measures in a small number of managed care plans and discussed the potential benefits and barriers to routine reporting of performance measures, such as the Health Plan Employer Data and Information Set (HEDIS), by gender. HEDIS is used by managed care plans to monitor quality of care, and 11 HEDIS measures are related to prevention or treatment of heart disease. In a research project within one large managed care organization, some plans had substantial gender differences, mostly favoring men, on these HEDIS measures.

Currently, the National Committee for Quality Assurance (NCQA) does not report these HEDIS measures separately for women and men, although gender (unlike race/ethnicity or socioeconomic status) is readily available from health plan records. Reporting CHD-related measures without consideration of gender can obscure important differences in the quality of care for women and men. Gender-stratified data would allow monitoring of gender disparities in care related to heart disease and provide a basis for quality improvement initiatives in women's health care.

4. Strategies for increasing the provision of recommended preventive services for women are hindered by the lack of a comprehensive public policy agenda addressing gender-specific research and data collection, health promotion strategies, and improvements in public health programs.

Several strategies have been developed to address the large burden of heart disease on the nation's health.[20–22] The recent "Heart Truth" public education campaign, sponsored by the National Heart, Lung, and Blood Institute at the National Institutes of Health, is one of the few strategies developed specifically to raise awareness of heart disease in women.[20] However, most do not address women as a target population with specific intervention strategies. The Department of Health and Human Services in conjunction with the Centers for Disease Control and Prevention recently published a national action plan for preventing heart disease but did not promote the use of gender-specific approaches to address this issue.[21] There has been evidence that prevention practices that are known to work effectively in women have been underutilized.[4,5] Development of effective implementation programs for prevention services is difficult when current strategies do not take into account gender-specific data.

Recent studies have indicated the serious lack of evidence on the effectiveness of many of the current practices for the prevention of heart disease in women. Women represent only approximately one-third of participants in clinical trials focusing on the prevention, diagnosis, and treatment of heart disease.[8,11] Even when women are included in significant numbers, data are frequently not reported or analyzed by gender. Many research studies that perform gender-specific analyses do not report or publish them. This severely limits the ability to apply study findings to women and improve prevention practices.

Key Recommendations

Four key recommendations emerged from the conference. The recommendations address clinical practice, research, quality improvement, and public policy.

1. Reduce the barriers to provision of recommended preventive interventions, especially tobacco cessation, for women in the primary care setting by providing necessary educational resources to health care professionals, creating system supports for innovative approaches to patient education and counseling, and advocating for adequate health insurance coverage of behavioral services aimed at reducing risks.

Reducing barriers to provision of recommended preventive interventions requires a comprehensive strategy that includes a broad range of health care professionals who provide primary care to women, such as physicians in several specialties (family practice, internal medicine, and obstetrics-gynecology), advanced practice nurses, dieticians, and others. Since the benefits of tobacco cessation interventions are well documented, this should be a primary area of focus.[12] Providing educational resources (e.g., guidelines for effective counseling, pocket guides, and patient education materials) and training health care professionals on their use allows for easier access and reference to information and increases the provision of preven-

tive services.[23] System supports, such as reminder systems, streamlined referral services, and performance feedback, are also needed to improve health care delivery.[12] Behavioral services, such as nutrition, exercise, and smoking cessation programs, are an essential component of prevention. Without adequate insurance coverage for these services, patients will be less likely to participate. Similarly, without reimbursement for counseling services, health care professionals will be less likely to provide them. Identifying comprehensive models that have been successful in behavior change and providing counseling services by multidisciplinary teams should be encouraged.

2. Partner with health plans, insurers, health care professionals, and accreditation organizations, such as the National Committee for Quality Assurance, to demonstrate the feasibility of gender-stratifying HEDIS performance measures related to heart disease for monitoring and improving quality of care.

A lack of gender-stratified quality performance measures limits the ability to adequately evaluate the quality of care received by women.[24] Although the burden on health plans for stratifying the data by gender is minimal, more information is needed to support a recommendation for routine gender stratification of HEDIS measures related to heart disease. For some measures, the number of eligible enrollees might be insufficient at the health plan level, requiring pooling data from several plans for analysis. In addition, the rationale for gender stratification would be strongest for those measures with the largest gender disparity and for which gender-based interventions are known. If gender differences are identified in nationally representative health plans, reporting of these measures by gender could be a key strategy for improving quality of care and for reducing gender disparities in the use of preventive, diagnostic, and treatment services related to heart disease. A constituency for gender-stratified reporting could include women's health advocacy and interest groups, business coalitions, and professional associations.

3. Require that federally funded epidemiological, clinical, and health services research be analyzed by gender and that gender-stratified data be made available to the research community.

While funding agencies require inclusion of women in research, few require investigators to report results by gender. The presentation of outcome data by gender can identify areas for improving care and generate further ideas for gender-based research. Outcome data analyzed by gender is especially helpful for conducting systematic evidence reviews and implementing updates in clinical practice. Investigators have had limited success in accessing and obtaining this data after study completion.[11] For these reasons, recent attention has focused on the publishing or archiving of data by subgroup.[11,25] Innovative approaches, such as providing access to data by subgroup on a public website, should be explored.

4. Develop a comprehensive public policy agenda that addresses prevention of CHD in women by increasing federal funding for epidemiological, clinical, and health services research on heart disease health promotion and prevention, implementation of proven preventive strategies for women in public health programs at the state and local levels, measuring and improving the quality of care at the primary care level, and ensuring access to appropriate CHD services for women.

Awareness and knowledge of heart disease in women continues to be poorly understood and contributes to a national public health crisis. Better implementation of current standards for inclusion of women in clinical trials and increasing the amount of research on heart disease in women is necessary.[26,27] Current public health programs aimed at heart disease prevention, such as the Centers for Disease Control and Prevention's WISEWOMAN and State Heart Disease and Stroke Prevention programs, also need to be evaluated and expanded to ensure that women receive access to appropriate, gender-based prevention practices. In addition to the development of quality standards for cardiovascular care in women, such as those at NCQA, methods to reducing these barriers to high-quality care must be found. These might include encouraging financial incentives for health care professionals to use "best practices" and creating better systems for adherence and implementation of clinical guidelines. A public policy agenda should also include eliminating barriers related to the reimbursement of preventive services.

Next Steps

These recommendations are meant to serve as a framework for developing future research and policy agendas as well as provide the foundation for the next phases of the Jacobs Institute of Women's Health initiative on women's cardiovascular health. In the next year, the Jacobs Institute will work to implement many of the recommendations in this report, such as including women in national public health prevention strategies, by collaborating with conference supporters and participants. The Institute anticipates that the National Committee for Quality Assurance will initiate research for stratifying quality measures by gender.

Acknowledgments

The authors would like to thank the members of the steering committee for their assistance in developing the scope and framework for this conference. We would also like to

acknowledge the presenters and panel discussants at the conference who helped in drafting preliminary recommendations and summarizing conference discussion. Special thanks go to those who reviewed and edited this report.

Appendix 1. Women and Heart Disease: Putting Prevention into Primary Care Conference Report

Conference Co-Chairs

Sharonne N. Hayes, MD, FACC
Director, Women's Heart Clinic
Mayo Clinic
Rochester, MN

Carol S. Weisman, PhD
Professor of Health Evaluation Sciences and Obstetrics and Gynecology
Department of Health Evaluation Sciences
Penn State College of Medicine
Hershey, PA

Conference Presenters

Michael Cabana, MD, MPH
Assistant Professor of Pediatrics
University of Michigan Medical Center
Ann Arbor, MI

Carolyn Clancy, MD
Director
Agency for Healthcare Research and Quality
Rockville, MD

Claudette Ellis
Consumer Advocate and Health Educator
WomenHeart
Columbia, MD

Allen Fremont, MD, PhD
Associate Natural Scientist
RAND Corporation
Santa Monica, CA

Deborah Grady, MD, MPH
Vice Chair, Department of Epidemiology
University of California, San Francisco
San Francisco, CA

Charles Hammond, MD
Immediate Past President
American College of Obstetricians and Gynecologists
Durham, NC

Vivian Pinn, MD
Director, Office of Research on Women's Health
National Institutes of Health
Bethesda, MD

Athena Poppas, MD
Assistant Professor of Medicine, Brown University
Director, Echocardiography
Rhode Island Hospital
Providence, RI

Rose Marie Robertson, MD
Professor of Medicine and Director of Women's Heart Institute
Vanderbilt University Medical Center
Nashville, TN

Veronique Roger, MD, MPH
Professor of Medicine
Mayo Medical School
Rochester, MN

Marita Titler, PhD, RN, FAAN
Director, Research, Quality and Outcomes Management
University of Iowa Hospitals and Clinics
Iowa City, IA

Evelyn Whitlock, MD, MPH
Senior Investigator
Kaiser Permanente Center for Health Research
Portland, OR

Steering Committee Members

Roberta Biegel, MA
Director
Government Relations
Society for Women's Health Research
Washington, DC

Arlene Bierman, MD, MS
Senior Research Physician
Center for Outcomes and Effectiveness Research
Agency for Healthcare Research and Quality
Rockville, MD

Carolyn M. Clancy, MD
Director
Agency for Healthcare Research and Quality
Rockville, MD

Patrice Desvigne-Nickens, MD
Leader, Cardiovascular Medicine
Division of Heart and Vascular Diseases
National Heart, Lung, and Blood Institute
National Institutes of Health
Bethesda, MD

Vivian Dickerson, MD
Associate Clinical Professor
Department of General Obstetrics and Gynecology
University of California, Irvine
Orange, CA

Pamela Douglas, MD
Head, Cardiovascular Medicine Section
University of Wisconsin–Madison
Madison, WI

Allen Fremont, MD, PhD
Associate Natural Scientist
RAND Corporation Santa Monica, CA

Deborah Grady, MD, MPH
Vice Chair, Department of Epidemiology
University of California, San Francisco
San Francisco, CA

Marcy L. Gross
Former Senior Advisor on Women's Health
Agency for Healthcare Research and Quality
Bethesda, MD

Claudia Louis, MBA
Manager
Government Relations
American Heart Association
Washington, DC

Nancy Loving
Executive Director
WomenHeart
Washington, DC

Ruth Merkatz, PhD, RN, FAAN
Director/Team Leader, Women's Health
Pfizer Inc.
New York, NY

Mary F. Mitchell, MD
Director, Clinical Practice/Gynecology
American College of Obstetricians and Gynecologists
Washington, DC

Vivian Pinn, MD
Director, Office of Research on Women's Health
National Institutes of Health
Bethesda, MD

Edward W. Probert
President and Chief Executive Officer
Fannie E. Rippel Foundation
Basking Ridge, NJ

Claudia Reid Ravin, MSN, CNM
Associate Director, Women's Health Programs
AWHONN
Washington, DC

Phil Renner, MBA
Director, Measures Development
National Committee for Quality Assurance
Washington, DC

Rose Marie Robertson, MD
Professor of Medicine and Director of Women's Heart Institute
Vanderbilt University Medical Center
Nashville, TN

Joyce Rudick
Director, Programs and Management
Office of Research on Women's Health
National Institutes of Health
Bethesda, MD

Robert Schenken, MD
University of Texas, San Antonio
Department of Obstetrics-Gynecology
San Antonio, TX

Jean Slutsky, PA, MSPH
Director, National Guideline and Quality Measure Clearinghouse
Project Director, USPSTF
Agency for Healthcare Research and Quality
Rockville, MD

Anne L. Taylor, MD
Associate Dean
University of Minnesota School of Medicine
Minneapolis, MN

References

[1] Misra D, ed. Women's health data book: a profile of women's health in the United States. 3rd ed. Jacobs Institute of Women's Health and The Henry J. Kaiser Family Foundation; 2001.

[2] American Heart Association. Heart disease and stroke statistics— 2003 update. Dallas, Texas: American Heart Association; 2003.

[3] Roger VL, Jacobsen SJ, Weston SA, et al. Trends in the incidence and survival of patients with hospitalized myocardial infarction, Olmsted County, Minnesota, 1979 to 1994. Ann Intern Med 2002;136:341–348.

[4] Missed opportunities in preventive counseling for cardiovascular disease—United States, 1995. MMWR 1998;47:91–95.

[5] Schrott SG, Bittner V, Vittinghoff E, Herrington DM, Hulley S. Adherence to national cholesterol education program treatment goals in postmenopausal women with heart disease: the heart and estrogen/progestin replacement study (HERS). JAMA 1997;277:1281–1286.

[6] Mosca L, Jones WK, King KB, Ouyang P, Redberg RF, Hill MN. Awareness, perception, and knowledge of heart disease risk and prevention among women in the United States. Arch Fam Med 2000;9:506–515.

[7] Vollmer WM, Sacks FM, Ard J, et al. Effects of diet and sodium intake on blood pressure: subgroup analysis of the DASH-sodium trial. Ann Intern Med 2001;135:1019–1028.

[8] Grady D, Chaput L, Kristof M. Diagnosis and treatment of coronary heart disease in women: systematic review of evidence on selected topics. Agency for Healthcare Research and Quality (Contract #290-97-0013); 2002.

[9] Scholle SH, Chang JC, Harman J, McNeil M. Trends in women's health services by type of physician seen: data from the

1985 and 1997–98 NAMCS. Women's Health Issues 2002;12: 165–177.
[10] Henderson JT, Weisman CS, Grason H. Are two doctors better than one? Women's physician use and appropriate care. Women's Health Issues 2002;12:138–149.
[11] Grady D, Chaput L, Kristof M. Results of systematic review of research on the diagnosis and treatment of coronary heart disease in women. Agency for Healthcare Research and Quality (Contract #290-97-0013); 2002.
[12] Whitlock EP, Williams SB. The primary prevention of heart disease in women through health behavior change promotion in primary care. Women's Health Issues 2003;13:122–141.
[13] U.S. Preventive Services Task Force. Behavioral counseling in primary care to promote physical activity: recommendations and rationale. Ann Intern Med 2002;137:205–207.
[14] U.S. Preventive Services Task Force. Behavioral counseling in primary care to promote a healthy diet: recommendations and rationale. Am J Prev Med 2003;24:93–100.
[15] Cabana MD, Kim C. Physician adherence to preventive cardiology guidelines for women. Women's Health Issues 2003;13: 142–149.
[16] Mosca L, Grundy SM, Judelson D, et al. Guide to preventive cardiology for women. Circulation 1999;99:2480–2484.
[17] Yarnall K, Pollak KI, Ostbye T, Krause KM, Michener JL. Primary care: is there enough time for prevention? Am J Public Health 2003;93:635–641.
[18] Association of Women's Health, Obstetric and Neonatal Nurses. Cardiovascular health for women: primary prevention evidence-based clinical practice guideline. Washington, DC: AWHONN; 2001.
[19] Bird CE, Fremont A, Wickstrom S, Bierman AS, McGlynn E. Improving women's quality of care for cardiovascular disease and diabetes: the feasibility and desirability of stratified reporting of objective performance measures. Women's Health Issues 2003;13:150–157.
[20] National Heart, Lung, and Blood Institute. Women's heart health: developing a national health education plan. Washington, DC: Office of Prevention, Education, and Control, National Heart, Lung, and Blood Institute, National Institutes of Health; 2001.
[21] U.S. Department of Health and Human Services. A public health action plan to prevent heart disease and stroke. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2003.
[22] U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With Understanding and improving health and objectives for improving health. 2 vols. Washington, DC: U.S. Government Printing Office; November 2000.
[23] Mehta RH, Montoye CK, Gallogly M, et al. Improving quality of care for acute myocardial infarction: the guidelines applied in practice (GAP) initiative. JAMA 2002;287:1269–1276.
[24] McKinley ED, Thompson JW, Briefer-French J, Wilcox LS, Weisman CS, Andrews WC. Performance indicators in women's health: incorporating women's health in the Health Plan Employer Data and Information Set (HEDIS). Women's Health Issues 2002;12:46–58.
[25] Keitt SK, Wagner CR, Marts SA.Understanding the biology of sex and gender differences: using subgroup analysis and statistical design to detect sex differences in clinical trials. Medscape General Medicine; 2003.
[26] United States General Accounting Office. National Institutes of Health: problems in implementing policy on women in study populations. Washington, DC; 1990.
[27] United States General Accounting Office. Women's health: NIH has increased its efforts to include women in research. Washington, DC; 2000.