

## Summit Meeting on Breast Cancer Among African American Women

*Supplement to Cancer*

# Increasing the Pool of Academically Oriented African-American Medical and Surgical Oncologists

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Dr. Melissa Bondy was Guest Editor for this article.

Presented at the Summit Meeting on Breast Cancer Among African American Women, Washington, DC, September 8–10, 2000.

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**BACKGROUND.** In the United States, breast cancer mortality rates are significantly higher among African-American women than among women of other ethnic backgrounds. Research efforts to evaluate the socioeconomic, environmental, biologic, and genetic mechanisms explaining this disparity are needed.

**METHODS.** Data regarding patterns in the ethnic distribution of physicians and oncologists were accumulated from a review of the literature and by contacting cancer-oriented professional societies. This information was evaluated by participants in a national meeting, "Summit Meeting Evaluating Research on Breast Cancer in African American Women." Results of the data collection and the conference discussion are summarized.

**RESULTS.** Ethnic minority specialists are underrepresented in academic medicine in general, and in the field of oncology in particular. This fact is unfortunate because ethnic minority students are more likely to express a commitment to providing care to medically underserved communities and, thus, they need to be better represented in these professions. Correcting these patterns of underrepresentation may favorably influence the design and implementation of culturally and ethnically sensitive research.

**CONCLUSIONS.** Efforts to improve the ethnic diversity of oncology specialists should begin at the level of recruiting an ethnically diverse premed and medical student population. These recruitment efforts should place an emphasis on the value of mentoring. *Cancer* 2003;97(1 Suppl):329–34.

*Published 2003 by the American Cancer Society.\**

DOI 10.1002/cncr.11027

**KEYWORDS:** breast cancer, African American, oncologists, mentoring.

**A** basic principle of epidemiology and medicine is that disparities in disease outcome for different population subsets can be attributed to variation in disease biology, variation in compliance with screening and/or disease detection, and variation in access to disease treatment. This is certainly true for breast cancer in the United States, where studies have demonstrated consistently a survival disadvan-

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Received September 14, 2002; accepted September 14, 2002

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tage for African-American compared with white breast cancer patients. Aggressive research investigating biologic variables that may explain this outcome inequality is clearly warranted. In addition, and some might argue more importantly, the oncology community must scrutinize every aspect of the health care delivery system, so that barriers to accessing effective breast cancer screening, treatment, and risk reduction programs are dismantled. Strengthening the ethnic diversity of health care providers, academicians, and scientists is an essential, but frequently overlooked, component of efforts to improve the delivery of these programs to the diverse American public. As population demographics continue to evolve, we will be caring for increasing proportions of ethnic minority patients, and it is critical that the oncology medical community is prepared to meet the needs of this culturally and ethnically diverse patient population.

Before the Summit Meeting on Breast Cancer Among African American Women (September 8–10, 2000, Washington, DC), participants were provided a draft document of this article. The draft document cited the importance of increasing the pool of academically oriented African-American oncologists and provided demographics that verified the low participation of African Americans in this profession. After a plenary session presentation, workshop attendees evaluated the presentation and provided recommendations. This article represents a summary of the workshop deliberations and other suggestions that were made during the course of the workshop and the summit.

Data from the Association of American Medical Colleges (AAMC) reveal that underrepresented minority medical school graduates (defined as medical school students identifying themselves as African American, Native American or Native Alaskan, Mexican American, or mainland Puerto Rican) were four times more likely to seek practices in socioeconomically deprived areas compared with other medical school graduates.<sup>1</sup> In light of these findings, Dr. Jordan Cohen outlined the following five compelling reasons for actively seeking greater diversity within the medical profession in his presidential address for the 107th annual AAMC meeting:<sup>2</sup>

1. Just and equitable access to rewarding careers.
2. Improved access to health care for the underserved.
3. Increasing culturally competent care.
4. Ensuring a comprehensive research agenda
5. Use of the rich and diverse pool of the nation's talent to better manage the health care system.

These issues are particularly crucial to the field of cancer research and treatment because ethnicity-as-

sociated survival disadvantages are significant for nearly every organ site. Dr. Cohen's list provides a convenient framework for a discussion regarding the importance of encouraging promising young African-American students to pursue careers in academic medicine as oncologists and scientists.

### **Access to Academic Careers**

Are sufficient numbers of African-American clinicians and researchers being trained and seeking careers in academic oncology? These numbers are difficult to quantify because many academic professional societies do not have readily available statistics on the ethnic background of their membership. However, we can glean some clues regarding the extent to which minorities are underrepresented in medical academia by examining a few areas from which data are collected, including medical school faculty, graduates from American medical schools, and residents in specialty training programs.

The American Medical Association<sup>3</sup> compiles information on faculty employed by U.S. medical schools. According to their 1997 statistics, only 2.6% of medical school faculty were African American. This includes 229 of 22,323 (1.0%) African-American professors, 418 of 20,300 (2.1%) associate professors, 1195 of 34,373 (3.5%) assistant professors, and 399 of 8841 (4.5%) instructors.

The American College of Surgeons collaborates with the AAMC in analyzing the ethnic and gender distribution of trainees in surgical residency programs. Over the past 10 years, the number of surgeons completing their residency training has been fairly consistent at approximately 1000 per year.<sup>4</sup> The proportion of ethnic minority residents within this group has also been consistent, at only 5% per year.

The American Association of Cancer Research reviewed their membership data and found some promising, but disappointing, results. Although the African-American membership has nearly quadrupled over the past 8 years, this subset continues to comprise less than 2% of the total membership for this esteemed academic oncology society.

There is potential for improving these numbers, based on the ethnic profile of medical school graduates. For the 1998–1999 academic year, African Americans comprised 1244 of 16,143 (7.7%) medical student graduates and 1354 of 16,790 (8.1%) first-year medical students.<sup>3</sup> Although these proportions are still underrepresentative of the 12% (and rising) African-American population in the United States,<sup>5</sup> they do indicate an expanding pool of talented young physicians who need to be mentored and recruited for careers in ac-

ademic oncology. It also is essential that we continue to fund scholarship programs designed to support the rising costs of medical education for these students, as emphasized by Burrow.<sup>6</sup>

### Improved Access to Health Care for the Underserved

The AAMC data regarding the increased likelihood of ethnic minority medical students to seek careers that provide service to the socioeconomically disadvantaged are strong evidence in support of this assumption. In addition, several studies demonstrate that there are ethnicity-related variations in the type and extent of treatment offered to African-American patients. These ethnicity-related treatment inequalities occur among patients with cardiac disease<sup>7,8</sup> and lung carcinoma.<sup>9</sup> It would be reasonable to assume that African-American breast cancer patients face similar barriers. Breen et al.<sup>10</sup> found that this was in fact the case in a review of data from participants in the National Cancer Institute's black-white cancer survival study. They reported that 21% of black patients failed to receive "minimum expected therapy" compared with 15% of white patients ( $P = 0.03$ ).

Presumably, disparities in treatment are related, at least partially, to suboptimal communication and educational interaction between health care providers and African-American patients. Increasing the number of available African-American clinicians might ameliorate this problem to some degree. However, African-American ethnicity does not guarantee empathy and cultural commonality with all medically underserved patients, nor does being white negate the ability to provide appropriate, culturally sensitive care to African-American patients. Diversity in the medical workplace and a commitment to equal employment opportunities are evidence of a medical institution's commitment to providing equality in health care services. African-American patients receiving medical care in institutions that are staffed exclusively by white physicians may feel estranged from their health care providers at the start of treatment, and this may jeopardize the likelihood of successful treatment completion. The sociology and oncology literature suggests that many African-American patients will have greater levels of trust in health care institutions staffed by African-American providers. This importance of the profile of "the messenger" in delivering health care information to minority ethnicity communities was stressed by Nickens,<sup>11</sup> Cooper-Patrick et al.,<sup>12</sup> Freedman,<sup>13</sup> and Burrow.<sup>6</sup>

These problems will be magnified in the face of socioeconomic disadvantages. Hand et al.<sup>14</sup> demonstrated that breast cancer patients receiving care in urban hospitals with higher proportions of underin-

sured patients were significantly less likely to have hormone receptor testing (an essential component of algorithms defining breast cancer treatment and prognosis) performed on their tumors. They were also less likely to receive indicated radiation therapy.

The complex relationship between ethnicity, culture, socioeconomic status, and cancer outcome is aptly described by Freeman.<sup>15</sup> The importance of culturally and ethnically sensitive health awareness materials targeting medically underserved communities is stressed in a joint report from the American College of Surgeons and the American Cancer Society.<sup>15</sup> Because ethnic minority individuals comprise a disproportionately high fraction of medically underserved communities, it is hoped that input from ethnic minority health care professionals will improve access to health care for these patients.

### Improving Culturally Competent Care and ensuring a Comprehensive Research Agenda

Randomized clinical trials are vital components of cancer research because they provide the highest-quality standards for evidence-based medicine. Results from clinical trials cannot be generalized to the entire population unless the participants are truly representative of the patient population. As long as ethnicity-related disparities in cancer outcome persist, we are obligated to ensure that new treatment modalities are equally efficacious for diverse patient subsets.

Potential consequences of unsuccessful diversity in patient accrual were demonstrated in the National Surgical Adjuvant Breast Project (NSABP) P-1 Study,<sup>16</sup> a placebo-controlled trial of tamoxifen for breast cancer chemoprevention in high-risk women. Only 1.7% of the study participants were African American. As a result, there were no definitive conclusions regarding the effectiveness of tamoxifen among African-American women. The higher breast cancer mortality rates seen among African-American women make the potential option of chemoprevention particularly attractive. However, it is well known that there are age-related differences in breast cancer incidence between African-American and white women, with African-American breast cancer patients having a younger age distribution.<sup>17</sup> In addition, there is ethnicity-related variation in the incidence of thromboembolic phenomena such as deep vein thrombosis and pulmonary embolism.<sup>18,19</sup> Tamoxifen is associated with an increase in risk for thromboembolic phenomena, but the increase in risk for this adverse sequela is primarily seen among women over the age of 50 years.<sup>16</sup> The net result of the overall risks versus benefits of tamoxifen as chemo preventive among African-American women is unknown. Scientific data from the NSABP

P-1 trial demonstrating a similar activity profile for tamoxifen in both ethnic groups would have been ideal. The lack of these data has left patients and clinicians alike with substantial discomfort regarding a risk reduction alternative that could potentially save many lives.

The consequences of clinical trial deficits are long-standing and extensive. As a result of inadequate diversity among patients in clinical trials, breast cancer risk assessment for African-American women continues to be poorly understood. The Gail breast cancer risk assessment model<sup>20</sup> is currently the standard for determining eligibility for chemoprevention consideration in clinical practice and for participation in the NSABP's second chemoprevention trial comparing tamoxifen and raloxifene. However, the Gail model was developed from an analysis of breast cancer risk factors in a case-control study of participants in the Breast Cancer Detection and Demonstration Project (BCDDP). The BCDDP was a prospective study of mammography screening conducted by the American Cancer Society during the 1970s.<sup>21</sup> Only 6% of the BCDDP participants were African American. Therefore, this 1989 case-control study of predictive breast cancer risk factors focused primarily on white patients, as is demonstrated by the title of the study, "Projecting individualized probabilities of developing breast cancer for white females who are being examined annually."<sup>20</sup> The prevalence of various breast cancer risk factors varies with ethnic background.<sup>22</sup> The extent to which this variation may alter their causal association with breast cancer is unknown. The end result is that in the year 2000, we have an effective means of breast cancer risk reduction for selected high-risk patients, yet we do not have a validated model for quantifying breast cancer risk among African-American women. This dilemma is related directly to failures in clinical trial accrual dating back 30 years.

The goal of achieving appropriate diversity in patient accrual for randomized clinical trials is no longer merely a concept; it is the law. The NIH Revitalization Act of 1993, signed into effect by President Clinton, directs the National Institute of Health to establish guidelines for inclusion of women and minorities into clinical trials "in a manner sufficient to provide for valid analysis of whether the variables being studied in the trial affect women or members of minority groups, as the case may be, differently than other subjects in the trial."<sup>23</sup>

We cannot determine with certainty whether increased recruitment of African-American academicians will solve the problem of improved diversity in clinical trials enrollment, but it is a reasonable suppo-

sition that the expanded experience and background of a diverse oncology community will lead to the design and implementation of culturally and ethnically sensitive trials. This viewpoint is shared by many respected leaders in the oncology field. The Institute of Medicine-commissioned committee on cancer research among minorities and the medically underserved included the following recommendation to the National Cancer Institute (NCI) in its report on "The Unequal Burden of Cancer": "[The] NCI should develop a process to increase the representation of ethnically diverse researchers and public representatives serving on all advisory and program review committees so that the makeup of these committees reflects the changing diversity of the U.S. population. [The] NCI should develop an evaluation plan to assess the effect of increased and more diversified ethnic minority community and researcher input on changes in NCI policies and priorities toward ethnic minority cancer issues."<sup>24</sup>

In a comprehensive review of strategies aimed at improving ethnic minority participation in clinical trials, Swanson and Ward<sup>25</sup> stressed the importance of involving ethnic minority health professionals in the design of the trial and accrual efforts.

### **Increasing the Quality of Academic Medicine by Expanding Recruitment Efforts**

It is likely that the academic, clinical, and research arenas are potentially neglecting a large pool of talent and intellect by not maximizing the recruitment of ethnic minority clinicians and scientists. In an editorial regarding the importance of these recruitment efforts, Silen<sup>27</sup> commented that it is essential to keep in mind that the best and the brightest include persons of all races, ethnicities, and genders.

Admittedly, there are some universal barriers to academic careers that cannot be easily overcome. Wells<sup>27</sup> emphasized the importance of personal drive and ambition in characterizing academic clinicians, qualities that are particularly important in an era of reduced financial compensation for physicians and scientists. Medical students are graduating with increasing financial indebtedness. These problems may be magnified for many young ethnic minority physicians who have fewer family and personal economic resources. Institutions and members of the established academic oncology community have an obligation to address these obstacles. Within the NIH, the NCI, and the National Institute of Environmental Health Sciences, grants and funding programs are available that meet the needs of young researchers from predominantly ethnic minority medical institu-

tions. These programs should be publicized widely and expanded.

Pollock and Curley<sup>28</sup> discussed the value of mentoring young trainees and encouraging them to pursue fellowship training as a viable route to productive academic and surgical oncology careers. The impact of a valuable role model can be generalized to medical oncology as well as to basic science research. The commitment to mentor trainees cannot be overemphasized in the quest for improving diversity in academic oncology. This commitment requires time and outreach efforts. Frequently, mentors are pursued by aggressive and focused young scientists. However, the global gain is enhanced if established academicians actively recruit promising young medical students and/or residency trainees from their own or from neighboring programs. The successful mentor will take the time to guide the aspirations of these talented trainees toward the extremely rewarding field of academic oncology research. Assisting the young trainee in finding suitable academic positions is also important and requires a personal willingness to seek the assistance of colleagues.

The data from this article were discussed at the summit meeting in Washington, DC. The individuals who participated in the workshop focusing on this report drafted the following list of recommendations aimed at increasing the number of African-American oncology specialists:

1. Place more emphasis on the important value of African-American medical and surgical oncologists by proclaiming their influential roles in a) designing clinical trials that are culturally and ethnically sensitive and recruiting African Americans into these trials, b) mentoring future African-American biomedical researchers, c) serving as role models for aspiring professionals, d) supporting the platforms of African-American breast cancer advocates, e) developing policy that addresses the breast care needs of African-American women, and f) contributing to the breast care health for all people.
2. Continue to collect data on participation of ethnic minority groups in cancer-related training programs and professional societies, expand this data collection effort, and ensure that gaps in data acquisition do not delay immediate and strong efforts to enhance recruitment.
3. Increase recruitment efforts at all levels of education, including residency, medical school, undergraduate, and grade school programs.
4. Place more emphasis on early intervention programs that encourage interest in biomedical fields

through exposure to health care professions during grade school.<sup>29</sup>

5. Ensure that grade school teachers and guidance counselors as well as college faculty and career counselors are educated and willing participants in the effort to increase African-American students' interest in pursuing biomedical professions.
6. Place more emphasis on mentoring programs at all levels that recruit African American as well as non-African Americans to serve as mentors. It is through strong mentoring activities from a multiethnic senior support staff that junior-level individuals will be afforded a broad spectrum of viable opportunities for academic and professional growth and success.
7. Identify and eradicate the existing barriers (e.g., financial, ethnic discrimination, lack of inclusion) that prevent recruitment, retention, and advancement.
8. Encourage biomedical professional societies to establish programs designed to encourage participation of African Americans in society activities. Examples of such programs might include the development of minority affairs/special populations committees, travel awards for minority ethnicity students, and mentorship programs.
9. Develop a database of model programs that address recruitment of African Americans in biomedical research careers and promote their content as well as availability through printed materials, videos, curriculum modules, and the Internet. Ideally, this database of resources would be maintained by a well established, national organization.

Ultimately, the worthwhile goal of increasing ethnic diversity within the field of academic oncology requires forethought, sincere commitment, and energy expenditure on the part of both institutions and individuals. In the interest of our enlarging ethnic minority cancer patient population, we cannot afford to neglect this responsibility.

## REFERENCES

1. Association of American Medical Colleges. Specialty choice, intended practice location, and ethnic identity: career plans of the 1996 graduating medical school class. *AAMC Fact Sheet* (online). 1997;1:11. [URL: <http://www.aamc.org> [accessed Jul 2000].
2. Cohen JJ. Finishing the bridge to diversity. *Acad Med*. 1997; 72:103-109.
3. American Medical Association (online). [URL: <http://www.ama-assn.org/> [accessed Jul 2000].
4. Kwakwa F, Jonasson O. The longitudinal study of surgical residents, 1994 to 1996. *J Am Coll Surg*. 1999;188:575-585.
5. U.S. Census website. [URL: [accessed date].

6. Burrow GN. Medical student diversity — elective or required? *Acad Med*. 1998;73:1052–1053.
7. Schulman KA, Berlin JA, Harless W, et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med*. 1999;340:618–626.
8. Rathmore SS, Berger AK, Weinfurt KP, et al. Race, sex, poverty, and the medical treatment of acute myocardial infarction in the elderly. *Circulation*. 2000;102:642–648.
9. Bach PB, Cramer LD, Warren JL, Begg CB. *N Engl J Med*. 1999;341:1198–1205.
10. Breen N, Wesley MN, Merrill RM, Johnson K. The relationship of socioeconomic status and access to minimum expected therapy among female breast cancer patients in the National Cancer Institute black-white cancer survival study. *Ethnicity Dis*. 1999;9:111–112.
11. Nickens HW. Health promotion and disease prevention among minorities. *Health Affairs*. 1990;9:133–143.
12. Cooper-Patrick L, Gallo JJ, Gonzales JJ, et al. Race, gender, and partnership in the patient-physician relationship. *JAMA*. 1999;282:583–589.
13. Freedman TG. "Why don't they come to Pike Street and ask us?": Black American women's health concerns. *Social Sci Med*. 1998;47:941–947.
14. Hand R, Sener S, Imperato J, Chmiel JS, Sylvester JA, Fremgen A. Hospital variables associated with quality of care for breast cancer patients. *JAMA*. 1991;266:3429–3432.
15. Freeman HP. Cancer in the economically disadvantaged. *Cancer*. 1989;64 (Suppl):324–334.
16. Fisher B, Costantino JP, Wickerham DL, et al. Tamoxifen for prevention of breast cancer: report of the National Surgical Adjuvant Breast and Bowel Project P-1 Study. *J Natl Cancer Inst*. 1998;90:1371–1388.
17. SEER Cancer Statistics Review: 1973-1990. Bethesda: National Institutes of Health, 1993.
18. Rosamond WD, Folsom AR, Chambless LE, et al. Stroke incidence and survival among middle-aged adults: 9-year follow-up of the atherosclerosis risk in communities (ARIC) cohort. *Stroke*. 1999;30:736–743.
19. National Center for Health Statistics. Vital statistics of the United States, 1992. Vol. II: mortality. Part A. DHHS Publication No. (PHS) 96-1101. Washington, DC: Public Health Service; 1996.
20. Gail MH, Brinton LA, Byar DP, et al. Projecting individualized probabilities of developing breast cancer for white females who are being examined annually. *J Natl Cancer Inst*. 1989;81:1879–1886.
21. Baker LH. Breast cancer demonstration detection project: five-year summary report. *CA*. 1982;32:194–225.
22. Mayberry RM, Stoddard-Wright C. Breast cancer risk factors among black women and white women: similarities and differences. *Am J Epidemiol*. 1992;136:1445–1456.
23. Freedman LS, Simon R, Foulkes MA, et al. Inclusion of women and minorities in clinical trials and the NIH Revitalization Act of 1993 — the perspective of NIH clinical trialists. *Controlled Clin Trials*. 1995;16:277–285.
24. Haynes MA, Smedley BD, eds. The unequal burden of cancer: an assessment of NIH research and programs for ethnic minorities and the medically underserved. Institute of Medicine. Washington, DC: National Academy Press, 1999:15.
25. Swanson GM, Ward AJ. Recruiting minorities into clinical trials: toward a participant-friendly system. *J Natl Cancer Inst*. 1995;87:1747–1759.
26. Silen W. Cultural incompetence or enlightened care. *J Am Coll Surg*. 1999;189:431.
27. Wells S. The surgical scientist. *Ann Surg*. 1996;224:239–254.
28. Pollock RE, Curley S. Training for careers in surgical oncology: the future is bright. *Ann Surg Oncol*. 1999;6:517–518.
29. Johnson-Thompson M, Sullivan C, Olden, K. NIEHS/AACR task force on the advancement of minorities in science: vision for a model program. *Cancer Res*. 1996;56:3380–3386.