Disparities in Cancer Care: Challenges and Solutions

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By Derek Raghavan, MD, PhD, FACP, FRACP, FASCO [6]

There is an increased incidence of cancer in minority populations, accompanied by reduced survival. This review will address specific areas of disparity in cancer care, including prevention, diagnosis, treatment, and outcomes, and will consider steps toward resolving these issues.

Despite one of the highest health-care expenditures in the world, the United States is currently facing several crises in health care. One of the most important of these crises is inequity in health services. Our increasingly diverse nation is characterized by the fact that our minority populations do not fare as well as the majority in our health-care system.[1-3] This applies particularly to cancer management, where it is clear that prevention, diagnosis, treatment, and research are inferior for these populations, culminating in substantially impaired survival among minority groups.[2,3]

Several factors appear to contribute to these differences, including minority community suspicion of the health-care system and of physicians drawn from other cultures (reflecting past unsatisfactory experience), poverty, lack of access to care, lack of health insurance, stigmas associated with cancer and death, linguistic and literacy barriers, and poor expectations of cancer treatment outcomes. This lack of equity in the health-care system can collectively be termed "disparity of care," and the phenomenon is not unique to minority populations in the United States.[4] Although there are many relevant definitions, the US Department of Health and Human Services defines health disparities as "differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups."

Scope of the Problem
The biomedical community has increasingly recognized the existence of these issues in recent years, and has begun to focus on defining the extent of the problem(s) and possible solutions. For example, the recent position paper from the American College of Physicians[1] addressed the following key items:
• Health insurance coverage is inadequate for minority populations, especially the economically disadvantaged, for whom it is often economically not affordable.
• There is an important need for health-care providers to recognize and address extant cultural differences in minority populations, including the limitations imposed by language barriers, and to develop skills related to cultural competency.
• The health-care industry is not adequately addressing minority community needs, nor involving their leadership in addressing these problems.
• The medical workforce is not sufficiently diverse to deal with minority needs, and this should be addressed at the level of the health-care industry and medical training institutions, as well as at the level of community support, for appropriate training of minorities for the health-care professions.
• There is a need for public policies to improve public education on prevention strategies and to reduce targeting of minority populations by the tobacco industry, firearms manufacturers, and other providers of potentially harmful products.
• There is a deficit of research on disparities in care, including demography, causes, and outcomes, which must be urgently addressed to allow the definition of the extent and impact of these problems, as well as strategies for their resolution.

In addition to the factors enumerated above, it should be noted that evidence suggests there are real differences in the biology of cancer and of response to treatment in different populations, based on differential gene expression, as discussed below.

Disparities in Cancer Care
These problems, as they relate to cancer, are somewhat unique. Before one even considers the specific problems pertaining to minority communities, cure for many advanced cancers remains elusive for the general population. This is an area of clinical practice and research in which change is evolving rapidly, and where optimal treatment often involves clinical research or the early implementation of its products. This, in turn, may require involvement in early-phase or randomized
clinical trials, exposure to incompletely defined levels of hazard, and the necessity of dealing with detailed informed consent documentation, nonroutine patterns of care, and consequently higher levels of uncertainty. Furthermore, overextended local medical practitioners in minority communities may not be up to date with the latest developments in cancer care and technology, and are thus unable or unwilling to encourage their minority patients to gain the benefits of all available advances. These factors combine to make cancer care a particularly difficult issue for minority populations.

Demography
One of the most fundamental issues in any discussion of disparities in medical care that are based on race or ethnicity is the definition of these terms. Self-identified race or ethnicity (SIRE) is widely used as an index. However, this is subject to the vagaries of family legend, and it has been suggested that this parameter is more useful as a sociocultural index rather than for serious biomedical research,[5] and that specific genetic studies are more informative in this context. The alternative view is that, for whatever reason, there are genetic variations that are associated with SIRE, and that this index should not be dismissed.[6] Rebbeck et al propose that, with the paucity of extant information, SIRE and genetic information should be integrated and applied to disparities research to the extent possible[7]—a view that seems pragmatic and sensible.

On an international basis, disparities in health care are predominantly associated with poverty, advanced age, and geographic isolation,[3,4] whereas in the United States, there appears to be an added factor—race/ethnicity[8]—even if this is based on self-identification. Although not clearly documented, it is likely that similar situations exist throughout the world, and perhaps most dramatically in Third World countries. Of course, this situation may be confounded by economic status.

Notwithstanding the fact that national cancer statistics are predominantly based on SIRE, there is clear evidence of an increased incidence of cancer in minority populations, in many cases accompanied by reduced survival.[1,2,9] The total incidence of cancer is higher in African-Americans than in Caucasians,[9] with particular differentials in cancers of the prostate, lung, breast, and colon. Even when the stage of the disease is considered, survival figures are inferior in African-Americans and Latinos, although these data may be confounded by socioeconomic status, social habits, attitudes toward treatment, and comorbidities. It is clear that the perceivable gap in incidence and mortality statistics has not narrowed appreciably in the past 50 years.[2,9]

Specific Areas of Disparity in Cancer Care
When addressing the challenges and solutions to the problems of disparate cancer care, one can compartmentalize these issues into several key areas: design and implementation of cancer prevention and control strategies; rationalization of early diagnosis; improvement in access and strategies for treatment; and measurement of useful outcomes that are important to the community.

Prevention
Many factors contribute to the reduced participation by minorities in programs of cancer prevention.[10-12] Similar factors pertain to each of the specific areas of disparity, including poverty and lack of family support, social habits (diet, lack of exercise, industrial toxin exposure), attitudes and access to health care, and intercurrent medical problems, including obesity.[10,12] In addition to showing lower rates of smoking cessation, higher rates of unhealthy diets, and a greater likelihood of having dangerous workplace exposures, minority populations avail themselves less often of genetic testing to identify individuals at increased risk of cancer who may benefit from preventive strategies. For example, Armstrong et al[13] have shown that minority women tend to be more reluctant to undergo BRCA1/2 testing, even when they have a positive family history for breast or ovarian cancer. This, in turn, interferes with their ability to benefit from prophylactic mastectomy or oophorectomy. A similar situation exists for minorities at increased risk of colorectal cancer.

Diagnosis
Delay in diagnosis of cancer is also found in patients of lower socioeconomic status, particularly in minority populations. As with other disparities, this is associated with lack of health insurance, absence of a regular "home" for health care, lack of access to health care, attitudes and beliefs, and health provider factors (overload, errors of clinical practice, language barriers, social stereotyping).[2,10-13] For example, negative attitudes among minority patients to cancer screening[12] and genetic testing[13] are strong negative predictors of use of such services (eg, mammography). Similar cultural paradigms are present for most common cancers.

Treatment
One of the more disturbing issues related to health-care disparity is the concern that the differences in outcome of cancer treatment are not solely due to delays from lack of access to care and
problems with prevention and diagnosis, but may also reflect inferiority of some medical services in underprivileged areas.[14] This assertion is extremely difficult to characterize, and may reflect differences in resources, staffing, patient population, and many other factors.

For example, evidence suggests that competing causes of death, associated with increases in comorbidity, may contribute significantly to impaired cancer survival statistics in some minority populations.[15] Inferior outcomes may represent a summation of more advanced presentation and differences in applied treatment.[16] Clearly, more information should be acquired prospectively to allow our community to understand these issues and to respond to them appropriately.

Outcomes

The ultimate measure of disparities in cancer care would be reflected in outcomes—specifically, national incidence and mortality figures. It is quite clear that minority populations have a higher total incidence of cancer and a higher total death rate.[9,10] It is also clear that specific tumor types are associated with higher death rates, including the commonest malignancies—cancers of the lung, prostate, colorectum, and breast produce higher death rates among African-American and Hispanic patients. One of the biggest problems is the lack of good quality information that is collected prospectively with clearly defined endpoints.

In the case of African-Americans, these figures may not necessarily reflect socioeconomic status, although this issue is controversial. It has been suggested that there is a higher death rate from cancer in African-Americans than in Caucasians of equivalent socioeconomic status. Most data suggest that the differences in outcome between non-Latino Caucasians and Latinos in the United States reflect socioeconomic status. Despite the increasing recognition of disparities in cancer care, it does not appear that the gap in survival is narrowing to any great extent.

Potential Solutions

As summarized in Table 1, each of the major issues discussed above has potential solutions, but it will require practical and fiscal commitment from the general community to ensure that major progress occurs in a timely fashion. It is clear that the biomedical community is increasing its efforts to address the problems discussed above, but most of these issues require community-based resolution, such as improved legislation with the creation of safety nets, community-linked patient navigator and access systems, improved social support and increased community health education.
Recent attention by the National Cancer Institute (NCI) to enforce the requirement of minority participation in clinical trials as well as minority representation on evaluation panels have already led to definable improvements in trial accrual and minority research focus within the NCI-supported cancer centers and collaborative research groups. Professional organizations are also taking a more active role. For example, the American Society of Hematology has initiated a mentorship program for young minority students, to give them more exposure to oncology science and clinical practice, emphasizing the potential for career pathways. The American Society of Clinical Oncology has created a Diversity Task Force with a specific advisory role for the Board of Directors; to date, this has resulted in the creation of a specific scientific symposium at each Annual Scientific Meeting, allocation of funds for research in disparities of cancer care, and initiatives for increased mentorship and training for young minority physicians and scientists.

We must take this problem seriously and muster specific resources to acquire finite solutions to the problems that exist. In northeastern Ohio, a task force has been established, incorporating representatives of the NCI-supported cancer centers, the political establishment, the

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### Table 1

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<tr>
<th>Parameter</th>
<th>Impediment</th>
<th>Potential Solutions</th>
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<tbody>
<tr>
<td>Fiscal</td>
<td>Insurance: medical, drugs</td>
<td>Create indigent safety net(s); regulation of pharmaceutical industry; evidence-based use of cancer therapies; limit provider incentives that may promote disparities of care; education regarding diet, smoking, etc, among indigent; strategies to deal with diet and carcinogen exposure among indigent</td>
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<td>Poverty; lack of family support (especially the working poor)</td>
<td>Health insurance; minimum wage; create indigent safety net(s); improved social support systems; improved patient transport systems for indigent</td>
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<tr>
<td>Cultural</td>
<td>Cancer stigma; fear; poor expectations of outcome of cancer treatment</td>
<td>Education within community; education of politicians and legislators regarding the problem</td>
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<tr>
<td></td>
<td>Suspicion regarding clinical trials and experimentation</td>
<td>Education within community; use of community role models; engagement of community physicians</td>
</tr>
<tr>
<td>Access</td>
<td>Lack of medical “home”</td>
<td>Accessible cancer care centers; patient navigator systems; education regarding availability and use of medical facilities; outreach facilities within the community</td>
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<tr>
<td></td>
<td>Alienation of minority patients from the majority medical community</td>
<td>Involve community leaders; train more minority oncologists; increase minority support staff; cultural competency training of majority physicians</td>
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<tr>
<td>Knowledge</td>
<td>Insufficient knowledge of the specifics of cancer in minority populations</td>
<td>Increase diversity and disparity research and funding; education of majority physicians and scientists; expand access to minority-specific clinical trials; expand minority pharmacology research; create local and national databases to monitor progress in disparities of care</td>
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African-American physicians' association, the church, and representatives of minority communities and consumer groups. This group has taken on the task of addressing disparities in cancer care in the region, including the provision of a safety net for the indigent and the development of more accessible clinical studies and management programs for these communities. Through active involvement of the broad spectrum of our community, it may be possible to improve outcomes. It is simply not enough to target surrogates of success, such as increased accrual to clinical trials or greater numbers of cases in screening programs. We must target finite endpoints of importance. Ultimately, for programs addressing disparities in care to be truly successful, we must see a minimization of the gap between the majority and minority populations in cancer incidence and cure rates.

**Disclosures:**
The author has no significant financial interest or other relationship with the manufacturers of any products or providers of any service mentioned in this article.

**References:**


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