

Statements from the President's Cancer Panel Meeting

Cancer Prevention and Control Research in the 21st Century

A variety of issues related to preventing and controlling cancer in the next century were presented to the President's Cancer Panel by researchers, advocates, and consumers at its November 17 meeting, hosted by the University of Arizona Cancer Center in Tucson. In response to data indicating that more than one-half of all cancers are preventable, a call was made to increase the proportion of resources devoted to cancer prevention and control research.

Advances in basic science have enabled detection of a vast array of molecular events that lead to cancer, and this knowledge is growing. As causes and mechanisms of cancer are elucidated, an increasing number of opportunities for research become available, and improved strategies for prevention become possible. It was predicted that a blending of scientific disciplines (e.g., epidemiologic, molecular, behavioral, nutritional) will evolve to address future research questions. Cancer risks related to environmental exposures, lifestyle, diet, and other factors will be examined in the context of genetic susceptibilities and the molecular processes of specific cancers.

Chemoprevention was identified as a critical strategy in this evolution. Given that cancer is an often lengthy process from initiation to the eventual detection of disease symptoms, researchers hope to develop chemopreventive agents that will block this process at different stages. Promising clinical trials are underway, for example, to identify agents that block UVB pathways that signal cancer phenotypes following sun exposure. If this is successful, a new market may develop for sunscreens that incorporate topical, medicinal agents to halt the progression and incidence of skin cancer. Lifestyle factors such as diet and physical activity are also being studied to determine, molecularly, how they may lead to or protect against some cancers (e.g., breast, colon).

The ability to identify individuals at risk of cancer-via genetic or molecular markers-also promises to change the way we think about cancer prevention and control. The Panel heard that future interventions will be designed for high-risk, moderate-risk, and low-risk groups instead of assuming all individuals respond the same way to carcinogenic exposure. Specific pathways for prevention will exist for specific groups.

Dr. Otis Brawley, Director, Office of Special Populations at the National Cancer Institute, predicted that the application of this growing body of knowledge could raise significant ethical dilemmas for research and medicine in the 21st century. He cautioned that our knowledge should not get ahead of our wisdom. Other speakers expressed an imperative to use gains in knowledge to redress disparities in cancer rates among poor, underserved, and racial/ethnic populations in the next millennium. Many examples of such disparities were provided. Despite progress, for example, in

controlling cervical cancer mortality in the United States, a disproportionate number of Hispanic women still die from this disease and it is the leading cause of death for women in developing countries.

A number of promising developments were presented. The use of telemedicine (e.g., telecolposcopy) in rural settings to improve access to and accuracy of cancer screening and diagnosis is being demonstrated. This technology could enable underserved populations to obtain the same specialized expertise available at large medical centers without leaving their communities. Biobehavioral approaches to prevention are also showing positive results. One smoking cessation study reported higher rates of long-term cessation when chemical intervention is combined with behavioral support.

A significant challenge for the future, the Panel learned, is shaping messages and developing tools to motivate people to adopt health promoting behaviors. As one advocate stated, good science is important, but so is the ability to deliver "scientific" messages to the public. Tailoring messages and materials to the variety of audiences and subpopulations in this country is particularly difficult because not everyone learns or is motivated in the same way. This problem is especially evident among adolescents, many of whom some studies are finding, react unfavorably to the messages delivered in current anti-smoking campaigns.

In the 21st century, urged Dr. Harold Freeman, Chair of the Panel, we must also continue to promote a well-rounded cancer research and application program driven by discovery, testing, translation, and access. This is the key to continued progress in the war against cancer. Policies to ensure access to intervention and treatment must be implemented as the ability to screen for and detect cancer improves. "Screening doesn't cure cancer," Dr. Freeman noted. "There need to be ways for people to be treated irrespective of their ability to pay."

It was suggested that if the paradigm in this century has been "medical oncology" and a focus on treatment, the new paradigm for the 21st century should be "preventive oncology"- intervening with persons identified as at-risk, but without symptoms of cancer. This paradigm moves from a "reactive" cancer care system to one that is proactive and participatory and reorients our current ideology from "sick care" to "health care." The opportunities that exist under such a paradigm are truly inspiring.