The Role of NCI-Designated Cancer Centers in the Nation’s Fight Against Cancer

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There are numerous cancer research centers in the U.S., but only 60 have the distinction of being National Cancer Institute (NCI)-designated cancer centers. The University of Hawai‘i’s Cancer Research Center is among this elite group. It is also the only NCI-designated cancer center in Hawai‘i and the Pacific basin. NCI-designated cancer centers can be found in 31 states and the District of Columbia, with some states boasting several designated cancer centers and 19 states that have none. When there are so many cancer research centers across the nation, what is it that distinguishes an NCI-designated cancer center from the others and what is the significance of having this designation?

The National Cancer Act of 1971 established the Cancer Centers Branch (CCB) of the NCI. It gave broad charge to the cancer centers that included research, excellence in patient care, training and education, demonstration of technologies, and cancer control. The initial model for a cancer center was based on several of the older, free-standing institutions such as Roswell Park, Memorial Sloan-Kettering, M.D. Anderson, and Fox Chase.

The Cancer Centers Branch classifies centers as either “basic,” “clinical,” or “comprehensive.” In order to receive recognition as an NCI-designated comprehensive cancer center, a center must have reasonable depth and breadth of research activities in each of three major areas: basic; clinical; and prevention, control, behavioral and population-based research AND exhibit a strong body of interactive research that bridges these scientific areas. The center is also encouraged to initiate and conduct early phase, innovative clinical trials and to participate in the NCI’s cooperative group network by providing leadership and accruing patients to trials. Additionally, the center must provide outreach, education and information on cancer to the community it serves.

A clinical cancer center conducts reasonable research activities in clinical oncology, with or without research that includes basic and/or prevention and control and population sciences. A center may compete successfully for a Cancer Center Support Grant with clinical programs only. However, when other areas of research are present, they should be integrated collaboratively with the clinical research. A clinical cancer center is also encouraged to conduct early phase, innovative clinical trials and to participate in the NCI’s cooperative groups.

The term cancer center, formerly known as a basic cancer center, is currently used in reference to a cancer center having a scientific agenda other than that of a comprehensive or clinical cancer center. Such a center may have a narrow research focus such as in basic science, population science, epidemiology, diagnosis, immunology or other areas. This type of cancer center is actively involved in the translation process through collaborative arrangements with other institutions, including comprehensive and clinical cancer centers and/or industry. Today the NCI supports 40 comprehensive centers, 12 clinical centers including the Cancer Research Center of Hawai‘i, and eight cancer centers.

In spite of the great institutional variety among the NCI-designated cancer centers, the one common denominator of all successful centers is excellence in research. Successful cancer centers have scientifically strong research bases, organized into collaborative programs focused on cancer. From these programs new ideas are generated and multidisciplinary research is fostered. The foundation of support for the research base is investigator-initiated grants from the National Institutes of Health and other funding sources that use rigorous peer review in their evaluation and funding process. Currently the Cancer Research Center of Hawai‘i brings $25 million annually into the state through awards of contracts and grants, primarily funded by the National Cancer Institute which also happens to represent the second largest research funding source for the entire University of Hawai‘i. Of this amount, 90% of the Cancer Center’s extramural funding is from peer-reviewed awards.

In addition to excellence in research, a successful center is organized and operated in ways that maximize the potential of its research base and can serve to strengthen the institution through the productivity and success of its individual programs. There are six essential organizational and administrative characteristics of successful centers:

- A clearly defined scientific focus on cancer research that is reflected in examination of the center’s grants and contracts, by the structure of its programs’ objectives, and by the nature of collaborations between fundamental researchers and others interested in applications of its research findings.

- A strong commitment of the parent institution to the cancer center through: 1) recognition of the cancer center as a formal organizational component and provision of sufficient resources and space to insure organizational stability and fulfillment of its objectives; 2) assignment of comparable organizational status of the cancer center to other organizational units of similar importance within the institution; and 3) provision of assurance of its commitment to continuing support of the cancer center in the event of a change in directorship and having in place a well-defined plan for this occurrence.

- Arrangement of the center for the conduct of research and the evaluation and planning of center activities to promote joint activities and collaborations and interactions within and among its programmatic elements.

- Facilities dedicated to the center’s shared resources, to the conduct of research and to administrative activities that are appropriate and adequate for the center’s needs.

- A highly qualified center director who is a distinguished scientist and administrator with leadership experience and authority appropriate to managing a complex organization.
• A high degree of coordination, interaction and collaboration among cancer center members that enhances the productivity and quality of cancer research in the center.

The National Cancer Act infused the necessary dollars and authority into the NCI to make the "conquest of cancer a national crusade." The NCI invested wisely in cancer research by engaging and organizing the efforts of many brilliant scientists from universities, cancer centers, and hospitals not only in the U.S. but also from all over the world. The National Cancer Act and more than 30 years of experience and billions of dollars of public investment in cancer research, produced an overwhelming record of scientific discovery, established a nationwide network of cancer centers, trained cancer experts, and developed programs in community outreach and cancer prevention.

The nation's investment in cancer research has resulted in tangible dividends. Since 1991 there has been a notable decline in U.S. death rates in certain cancers, and today there are more than eight million cancer survivors. Although the biology of the more than 100 types of cancers has proven more complex than imagined in 1971 and effective treatments for the many cancers have remained elusive, more than 30 years of cancer research have given physicians better information and tools to deal with cancer. This has resulted not only in better survival but in improved quality of life for individuals with cancer.

There is much more to be learned and accomplished in cancer research. Therefore, the cancer centers program remains a significant component of the nation's cancer research investment and one that needs and deserves continued public support. The stability and centralized support by the Cancer Center Support Grant allows an institution to conduct a wide array of investigations into the etiology and treatment of cancer. With today's turbulent healthcare environment, cancer center support is especially critical in ensuring that cutting edge research be allowed to flourish. This is also a time when the scope of cancer research has been expanded to include studies of asymptomatic individuals for whom genetic susceptibility and early detection can play a key role in risk reduction, and clinical investigations will require an even broader array of researchers and access to a greater number of research participants.

Fierce competition exists among cancer research centers in the U.S. to attain NCI designation due to the limited availability of funds. Therefore, once such designation is achieved, it is imperative that designated cancer centers maintain their research focus and expand their collaborative research efforts, while at the same time continue to conduct high quality research.

The concept of the cancer centers program that evolved over 30 years ago has resulted in a highly successful infrastructure within which NCI-designated cancer centers have become centers of excellence. Because of the major success of the cancer centers program, other NIH institutes are considering adoption of the same model to create similar programs for other disease entities.

Having all of its programs organized and housed in a single physical structure is a major benefit to successful cancer centers as this environment facilitates and encourages the conduct of translational research. This is an area that will receive increased funding in the future to ensure and enhance greater strides in medical research. The Cancer Research Center of Hawaii envisions being able to conduct translational research in its future plans. In order to do this the Center, which long outgrew its current facility, hopes to move its entire operations into a single facility one day, whether it be at the planned University of Hawaii Health and Wellness site in Kakaako or elsewhere in Honolulu.

As mentioned earlier, the Cancer Research Center of Hawaii is currently classified as a clinical cancer center. However, our future goal is for the Center to become a comprehensive cancer center by adding an outpatient clinical component which is currently lacking. Addition of a clinical component would enable the Cancer Research Center to be classified as a comprehensive cancer center, fully capable of conducting Phase I and II clinical trials and to ultimately benefit the cancer patients of Hawaii. For more information about the Cancer Research Center of Hawaii, visit our website at www.crch.org or visit the NCI website at www.nci.nih.gov/cancercenters/ to learn more about the cancer centers program.