

THE NEXT FIFTEEN YEARS

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(Editor's Note: As we recognize the accomplishments of the first 15 years of the "War On Cancer", we asked Dr. Vincent T. DeVita to give us his personal reflections on what he hopes will be accomplished in the next 15 years.)

With the abundance of knowledge now flowing from research laboratories everywhere, I am optimistic that by the year 2000 we will have made significant strides in understanding the carcinogenic process, enabling us to prevent and treat cancer more intelligently. This new knowledge will directly benefit the general public and the cancer patient.

From my perspective, I can see that we already have "*money in the bank*" – built-in

progress from the positive effects of treatment programs started after the influx of funds provided by the National Cancer Act of 1971. Many of these recent advances in cancer treatment have not matured enough to be reflected in currently available mortality statistics, but, as all other positive studies have in the past, I predict they will soon be... early in the 1990s.

Because of the pace of research, we can look forward to accelerated progress between now and the turn of the century. The relatively new technology used to unravel the biology of the cancer cell is being integrated already into clinical research. We are fundamentally changing our approach to preventing and treating cancer as we bring molecular biology to the patient's bedside. For example, molecular characterization of the sequence of oncogene expression and gene amplification may soon prove to be practical tools in determining the aggressiveness of tumors and, to some extent, in selecting appropriate treatment.

Gene therapy is on the horizon. Vectors already exist to introduce genes into cells with signal systems attached to control their expression. Families of genes have been identified that mediate drug resistance. The same enzymes that are involved appear to be used by animals and humans to resist natural carcinogens. For the first time, this links carcinogenesis and resistance to anticancer drugs and provides us new targets for directing therapy.

To help fully translate our knowledge into the saving of human lives, the National Cancer Institute has set a goal to reduce the cancer mortality rate by half from the 1980 level by the year 2000. The Institute has developed a plan to achieve this goal through full and rapid application of existing knowledge of cancer prevention, screening and detection, and



NCI Director Vincent T. DeVita, Jr., M.D. discusses CCOPs and President Nixon's contribution to the National Cancer Program during ACCC's annual meeting.

state-of-the-art therapy. Half of the reduction will need to come from prevention and screening efforts and half from treatment.

About 35 percent of cancer deaths are believed to be related to diet. NCI's goal is to see Americans reduce their average daily fat consumption and increase fiber consumption. While we continue to study this approach in clinical trials, enough evidence exists to recommend these general dietary changes which may reduce the incidence and mortality from common cancers such as colon and breast.

If the percentage of those who smoke cigarettes could be halved by 1990, it is estimated that the annual cancer death rate would be reduced by 15 percent by the year 2000. We already have proof from the recent decline in lung cancer incidence among white men that we can reduce the burden from smoking-related cancers.

Screening for breast and cervical cancers has been scientifically established as effective, and we estimate that fuller screening for these cancers would reduce the annual cancer mortality rate by three percent. The goal for early detection of breast cancer is to increase the percentage of women aged 50 to 70 who have an annual physical examination and mammography to 80 percent. Now, about 45 percent of women in this age group get physical exams and 15 percent get mammograms. From a study of women enrolled in the HIP of New York, we know that breast cancer mortality is reduced 30 percent in women over 50 years of age who are screened by mammography and physical exam. For cervical cancer, the goal is to substantially increase the percentage of women who get PAP smears every three years.

In the area of treatment, full and rapid application of current state-of-the-art therapies could reduce the annual cancer mortality rate by an estimated 10-15 percent, and another 10 percent reduction could be achieved through treatment advances we can already see on the horizon that can be implemented by the year 2000.

Achieving these objectives will require the commitment of all Americans, and NCI invites the participation of the medical community, health and other professional organizations, government, industry, voluntary organizations, the media, and each individual to achieve them. ■