

THE

CANCER LETTER

P.O. Box 2370 Reston, Virginia 22090 Telephone 703-620-4646

Vol. 13 No. 14

April 3, 1987

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Subscription: \$160 year North America,
\$175 year elsewhere

GAO Draft Report Lukewarm On Cancer Survival Improvement; NCI Says It Is "Opinion, Not Fact"

The General Accounting Office has concluded in its draft report on cancer survival rates that while accuracy of the data "seems to have improved with the introduction of the Surveillance, Epidemiology and End Results program (SEER) by the National Cancer Institute in 1973," the survival rate (Continued to page 2)

In Brief

Tim Lee Carter, Former Congressman And NCAB Chairman, Dies; Helped Write National Cancer Act

TIM LEE CARTER, former congressman and a member of the National Cancer Advisory Board, died March 27 of anemia at a Glasgow, KY, hospital. He was 76. President Reagan appointed Carter chairman of the NCAB in 1962, and he served two years in that capacity. He continued attending meetings until last year when his health began to fail. His term expires in 1988. In Congress, Carter became the ranking Republican on the House Health Subcommittee and vigorously supported the National Cancer Act of 1971 and its subsequent renewals. He received his MD from the Univ. of Tennessee in 1937, served in the Army Medical Corps in Europe during World War II, established his private practice in his hometown of Tompkinsville, KY after the war and was elected to Congress in 1964. He resumed his medical practice in Tompkinsville after retiring from Congress in 1980. . . . ELEANOR NEALON, senior science writer for NCI Director Vincent DeVita for the past three years, has been appointed chief of the Reports & Inquiries Branch in NCI's Office of Cancer Communications. She will also hold the position of NCI Information Officer, OCC Director Paul Van Nevel said. Nealon was director of public relations at Georgetown Univ. Medical Center before joining OCC in 1981. NCI is recruiting a science writer to replace Nealon on DeVita's staff. Candidates for the GS 13 (about \$40,000 salary) position should contact Marianne Wagner, Chief, Personnel Management Branch, NCI, Bldg 31 Rm 3A19, Bethesda 20892, phone 301-496-3337 UNIV. OF TEXAS Science Park-Research Div. conference center will be named for veteran Congressman J.J. (Jake) Pickle at an April 9 ceremony. . . . HR 680, the bill introduced by Mary Rose Oakar (D-OH) that would permit Medicare reimbursement for mammography screening, will be introduced in the Senate by Barbara Mikulski (D-MD). The measure is being supported by the National Assn. of Breast Cancer Organizations.

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GAO Says Some Progress Made, But How Much Depends On Definition

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"provides limited information" and "interpretation remains difficult."

Commenting on the draft report, NCI criticized the negative tone expressed in some portions of it and said that it "does not reflect the subjectivity inherent in the methodology, nor does it reflect the past accomplishments of in cancer research and the present state of the art in treatment."

GAO, which is the investigative arm of Congress and is completely independent of the Executive Branch, had been asked by the Intergovernmental & Human Resources Subcommittee of the House Committee on Government Operations to examine changes in cancer patient survival over the period 1950-1982.

"Specifically, the report answers six questions related to cancer patient survival," the draft states:

"1. How accurate are the survival rates published by the National Cancer Institute?

"2. What do survival rates actually measure? (i.e., How meaningful are survival rates?

"3. What measurement problems limit our ability to interpret changes in survival rates over time?

"4. Have survival rates improved over the period of interest?

"5. Where improvements in survival rates have occurred, what factors can best account for them?

"6. Has progress been made in extending survival?"

GAO tried to find answers to those questions by looking at various NCI reports. However, "The bulk of the information consists of experts' opinions gathered in group interviews held at a number of cancer centers," NCI pointed out in its response. "The experts were asked their opinions on changes in disease management and whether reported differences in survival were real or 'artificial.' They were also asked to identify the specific factors contributing to any reported improvements."

GAO acknowledged the limitation in such subjective data noting that, "It should be emphasized that our design included elements of subjectivity and is heavily dependent on qualitative data. As such, our findings do not have the same conclusivity as that of studies which rely on objective, empirically

validated data. However, since a major rationale for conducting this study is that such data do not exist, we believe our results constitute the strongest comprehensive evidence to date on what has actually occurred in the area of cancer patient survival for the period 1950-1982."

The report states in its summary, "In order to get some sense of the extent to which we are successfully waging the 'war on cancer' (NCI objected to use of that term, calling it "inappropriate" because it "connotes that all the nation's cancer resources are devoted to clinical treatment research"), a variety of statistics are employed. The three major types of statistics are those that tell us how many people fall victim to the disease (incidence rates), how many deaths are caused by cancer (mortality rates), and the probability of cancer patients dying within a specified period of time (survival rates).

"Over the period 1950-1982, incidence and mortality rates for all forms of cancer combined have increased even after adjustments are made to control for an aging population. The only hopeful sign that we are making progress against cancer has been a steady increase in reported survival rates. Recently, however, questions have been raised as to whether cancer patient survival has actually improved or whether the reported improvements result from statistical artifacts. It is the resolution of this issue which serves as the central focus of this review.

Improvements For All Types

"GAO has determined that published survival rates, primarily because of the existence of various forms of measurement bias, cannot tell us much about actual survival trends over time. When additional evidence is examined for specific forms of cancer, it becomes clear that improvements in survival have taken place for almost all cancer types, although the actual improvements are typically less than those reported. A trend towards earlier detection of many cancer types, improved case management based on a better understanding of disease progression, refinements in surgical procedures, new radiation therapy devices and the advent of chemotherapy are the factors which most often account for the improvements noted.

"The GAO review shows that more cancer patient lives are being saved or extended than was the case in 1950; that these improvements in survival are nonetheless

limited because they have occurred primarily for the rarer forms of cancer; and that the improvements in survival have been greatest for those cancers which strike the young. There is also strong evidence that the quality of life for patients suffering from almost every form of cancer included in the study has improved.

"With respect to the first study question, how accurate are survival rates, GAO determined that the accuracy of the rates seems to have improved with the introduction of the SEER program. However, in addressing the second and third study questions, GAO found that the survival rate provides limited information and that interpretation of survival trends remains difficult primarily because of changes in detection practices and what is, or is not, called cancer. These changes introduce a number of biases which can artificially inflate the actual improvement in patient survival. Thus, the published survival rates are not especially useful guides to an understanding of actual survival trends over time.

Focused On 12 Cancers

"To answer the fourth and fifth questions, whether survival rates have actually improved, and, if so, the major factors accounting for the improvement, GAO focused its attention on 12 specific types of cancers. For each cancer, group interviews were conducted at two comprehensive cancer centers identified as having acknowledged expertise in that disease. These sessions yielded extensive information which showed that survival rates have indeed improved for most cancers and that the factors which most often account for the improvements are a trend toward earlier detection, improved surgical and radiation procedures and the advent of chemotherapy. However, major breakthroughs have been infrequent and have come primarily in the treatment of leukemias and lymphomas. Improvements in patient survival for the carcinomas, which constitute approximately 85 percent of all cancer cases, have been slower. A number of recently developed treatments to deal with various carcinomas were identified, most of which are too new to have significantly affected the latest published survival rates.

"One additional finding was that many of the experts interviewed felt that improvements in survival could be achieved through better application of existing treatments.

"Finally, with regard to the question of

whether progress has been made against cancer, GAO concludes that the answer is yes, but the amount of progress is as much a function of the particular definition of the term 'progress' being used, as it is a reflection of what has actually occurred in the field."

GAO offered this recommendation:

"That the National Cancer Institute included in future publications discussing patient survival a description of the potential sources of bias likely to cloud the interpretation of survival rates."

NCI responded both with general comments and point by point challenges.

Referring to the "tone of the statement" in which progress was described as "relatively modest," NCI said "this is in stark contrast with statements made in Chapter 4 such as 'whichever perspective one adopts, it is impossible to say there has been no progress made in extending patient survival.'"

NCI agreed that survival rates should not be used as the sole indicators of progress. "We believe that incidence, mortality and survival must all be brought together in analyzing trends in cancer. Moreover, this information must be coupled with the results of clinical research to judge the extent to which proven treatments have been, and are being, applied.

"This analysis must be done with the knowledge and judgment that because of the nature of the disease, the benefits of new treatments are not necessarily reflected immediately as changes in the measures of cancer. Indeed, an analysis reported in the 1985 annual cancer statistics review showed that about 20 percent of the breast cancer patients who died during 1983 had been diagnosed more than 10 years before, at a time when detection and treatment methods differed from those available today.

"The [GAO] report itself must be considered opinion, not fact. In general, we believe that the conclusions that cancer patient survival has increased are appropriate, but that the tone of the report is negative in terms of the real progress in cancer. In fact, the tone is counterproductive, in that it can lead physicians and the public to feel that appropriate treatment is not important--that it does not make a difference in patient outcomes. The statistical evidence from clinical studies, and from the SEER program, points to the contrary.

"In the executive summary to the report," NCI's response continues, "GAO states that the 'only hopeful sign' that we are making progress against cancer has been a steady increase in reported survival rates. Indeed, there are a number of hopeful signs, including falling mortality rates among those less than 65 years of age; a steady decrease in the percentage of the population who smoke and a slowdown in lung cancer incidence in white males--although smoking still accounts for some 30 percent of all cancer deaths; a decline in overall mortality for a number of cancers that is directly connected with changes in treatment for those cancers including Hodgkins disease, the childhood cancers, ovarian cancer and testicular cancer among others. We also see declines in stomach cancer mortality and cervical cancer. We also have results of the major clinical trials concerning screening for breast cancer, one in the United States and another from Sweden, which found that at least 30 percent of breast cancer mortality in women over age 50 can be eliminated through screening.

"In addition, over the past decade, the strides in basic research have been enormous. We now understand many of the cellular events which cause a cell to be transformed into a cancer cell. We also understand a number of the factors related to the promotion of cancer, once this initiation takes place. There is literally an explosion of information concerning the mechanisms of cancer growth as well as cancer metastasis. To say that there is only one hopeful sign is at once naive and shortsighted.

"In concentrating on survival as an indicator of improved prognosis for cancer patients, the report notes that 'it becomes clear that improvements in survival have taken place for almost all cancer types, although the actual improvements are typically less than those reported.'

"The reason the improvement is not as great as reported is, according to the report, that a number of 'forms of measurement bias exists.' As far as is known, this bias is of almost academic interest and is not a practical limitation to the interpretation of the data. The report does not outline the impact of these measurement biases on the survival rates."

Although the report notes improvements in early detection, treatment, etc., the NCI response said, "We agree. . . but regret the tone of the statement" that improvements are

limited because they occur primarily in rare cancers and those which strike the young.

"It should be noted that young not only includes those under 15 but those under age 65 as well," NCI said. "The latest 10 year national mortality statistics for 1975 through 1984 show a decline in mortality in whites from all cancer except lung cancer up to age 65, and a decline in all cancers including lung cancer up to age 55. This group makes up some 42 percent of all cancers.

". . . It is a particularly important conclusion that survival could be improved through better application of existing treatments. We believe strongly that this is true and have taken a number of steps to reduce the gap between state of the art and practice. NCI has developed an extensive network of cancer research centers across the country and a clinical research program that enables community physicians to participate in multi-center clinical trials of cancer treatment. This program has recently been expanded to include cancer control research as well as clinical research."

The NCI response also mentioned PDQ and the Cancer Information Service as part of the "nationwide cancer control effort to apply optimal treatment to the cancer patient."

Responding to GAO's conclusions, NCI said:

"1. The specific findings point out that progress has occurred but not to the extent shown in the survival statistics. Unfortunately, no percentages or other quantitative estimates are given to indicate to what degree the survival has improved, nor is the potential impact of the 'measurement biases' outlined, leading the reader to infer what he will.

"2. The methodology used--an analysis of the subjective opinion of experts--is only a first step. The next steps would involve detailed reviews of research reports for a number of cancer sites. This would be extremely time consuming and in turn would need to be addressed by experts working from a body of data. Recent experience with the consensus conference on breast cancer in which the data from the breast trials were pooled and analyzed testifies to the fact that it can be done and that it is useful, but that it is costly in terms of analysis resources. The method used here [in the GAO analysis] is a step toward an answer but is not sufficiently quantified to allow the reader to draw his own conclusions.

"3. The report discusses a number of 'measurement biases' that may be present and if present must be considered in the interpretation of the survival statistics, as well as incidence and mortality trends; however, the potential impact of the biases is not quantified and the reader is left to infer a large magnitude when the measurement bias or factor may be a purely hypothetical concept.

"4. We agree with the conclusion that in 11 of 12 cancers addressed survival has increased, although the increase in stomach cancer survival is not explained. This increase, albeit small, may reflect improved technique, or earlier detection, and concomitantly better treatment results.

"5. The tone of the report seems to contradict the conclusion that survival has increased, and could make the report counter-productive in perpetuating the notion that treatment is ineffective.

"6. Use of the term 'the war on cancer' is inappropriate. NCI does not use this term which connotes that all of the nation's cancer resources are devoted to clinical treatment research. Basic and applied research on prevention are important components of the program, as is research on screening, cancer etiology and cancer biology.

"7. We fully concur with the report that five year survival rates provide only limited information on the full extent of patient survival and do not reflect cancer morbidity.

"8. Progress in terms of the potential to extend the life of cancer patients is not measured through the survival statistics, but instead through the results of carefully controlled clinical studies. The experts were asked their opinions on research advances, but data from clinical studies exist to document the potential gains in survival. The comparison of SEER rates over time reflects actual survival in the general population and does not measure the potential for survival, i.e., that which can be achieved through state of the art cancer treatment.

"9. We are pleased that the report concludes that the survival rates as measured by the SEER program are more accurate than the rates derived from earlier studies."

NCI agreed with GAO on the need to provide a description of the bias that can lead to misinterpretation of survival rate changes in all future publications on patient survival. Beginning this year, potential sources of bias likely to cloud interpretation of sur-

vival rates will be included in the annual presentation and publication of cancer survival rates."

The draft report is subject to modification before it is released in its final form. GAO sometimes acknowledges the validity of agency responses (and sometimes does not). The responses are always included with the final report, but GAO will dispute those points with which it still disagrees.

In its present form, the report does not appear to be as negative as NCI executives had thought it might be, but they aren't happy with it, as the response indicates. Since GAO did not address the primary question--how much progress is really being made--in sufficient depth to provide a valid answer, the effort is probably a waste of resources. They should have done it right or not at all.

Top 42 CCOPs In Recompensation Identified; 230 Probable Payline

The new lineup in the renewal of the Community Clinical Oncology Program became clear this week with identification by **The Cancer Letter** of all those who scored 230 or better in the recent recompensation.

The list is not yet complete. NCI's Div. of Cancer Prevention & Control, with the support of the NCI Executive Committee and the National Cancer Advisory Board, probably will make three to five awards beyond whatever payline is eventually established, to pick up some CCOPs for geographic reasons or to keep alive exceptionally good performers who did not do well in review.

The prospect remains that NCI will reprogram some money to help lift the payline and get the total number funded closer to the present 57. There is also the possibility that the congressional appropriations committees can be persuaded to add money for a program that is not only being carried out exceptionally well but is politically popular.

As it stands right now, however, NCI has only \$10 million in its CCOP budget. That amount can be stretched, according to the current analysis of the individual CCOP budgets, to make no more than 45 awards, and possibly less.

That would cover the 42 with scores under 230, plus three exceptions.

The top 42, as determined by priority scores obtained either directly or indirectly

from the principal investigators, follow, in no particular order. Because some PIs are reluctant to make public their scores, they are omitted here (the best score, for North Shore of Manhasset, NY, of 115 has previously been published):

<>North Shore, Grand Rapids, St. Louis, Metropolitan Minneapolis, Mt. Sinai of Miami, Wilmington DE, Evanston, Columbus OH, Florida Pediatric, Central Los Angeles, Toledo, Rochester NY, Green Mountain VT, Southeastern Cancer Consortium, Portland OR, Dayton, Southern Maine, Eastern Maine, Geisinger Clinic, Peoria, Phoenix, Marshfield Clinic, Carle Clinic, Scranton, Binghamton, Kalamazoo, Hackensack, Allegheny of Pittsburgh, Atlanta, Ochsner of New Orleans, Wichita, Duluth, Sioux Falls, Syracuse, Kansas City, Sutter of Sacramento, CCOP of the Ozarks of Springfield MO, Springfield IL, Fargo, Allentown PA and Columbia MO.

DCPC staff members are combing through the budgets of those likely to be funded, looking for economies. For instance, they found at least one which did not ask for indirect costs, an unanticipated savings which could be applied to another group which otherwise might not be funded.

The list of the top 40 does not include some of the better performing current CCOPs which have become important contributors to protocols of the cooperative groups and some cancer centers. Group chairmen have indicated they will do everything possible to keep those CCOPs alive.

In the past, cooperative group chairmen have been able to help some institutions remain active with support from the chairmen's discretionary funds. With the current tight budgets, that may not be possible now.

In some instances, unfunded CCOPs will be encouraged to seek support through the Cooperative Group Outreach Program, usually smaller awards than in CCOP, made through the groups.

In many instances, the unfunded CCOPs will have to develop their own support. Many have done that anyway, and in fact were in operation, contributing patients to research protocols, when they submitted their CCOP applications.

PIs still have not received their pink sheets from NCI, with the critique of their applications. When they do, those who feel the reviewers were unfair or did not adequately consider all elements of their programs may consider appealing their scores.

ACR Survey Finds Radiologists Change Methods To Improve Mammography

Increasing utilization of mammography should be accompanied by optimal technical quality and low dosages, a mammography equipment survey by the American College of Radiology has concluded. The survey was published in the March issue of the "ACR Bulletin."

Of the 319 responses to the survey, the greatest number of returns came from radiologists either in a private hospital setting (49 percent) or a private office (26 percent). The results of the survey indicated that the most common method currently used for mammography is film screen (49 percent), followed by xeromammography (28 percent). Nearly 14 percent of the respondents use both film screen and xeromammography.

More than 60 percent of the radiologists reported changing their method of performing mammography within the past 10 years. About 15 percent of these radiologists have changed from direct film to xeromammography, and 23 percent have changed from direct film to film screen mammography. Approximately 50 percent have changed from xero to film screen mammography while six percent had gone from film screen to xeromammography. One half of the radiologists reported their mammography equipment was purchased after 1983.

In addition, 71 percent of the radiologists regularly monitored their mammography equipment dosages. This was most frequently done at six to 12 month intervals.

The findings further show that about one half of the radiologists indicated that a physical examination was done in addition to mammography in their facilities. Moreover, 53 percent said that breast ultrasound was performed, and the majority used the ultrasound only as an adjunct to mammography. Hand held breast ultrasound (93 percent) was used far more than automated whole breast ultrasound (7 percent). Only one respondent reported using thermography for breast cancer screening.

The results also found that 81 percent of the radiologists believe there is a need for additional mammography postgraduate courses for radiologists, and 69 percent believe that mammography courses should be offered for technologists.

The survey was conducted by a subcommittee of the ACR Breast Imaging Committee--Lawrence Bassett, Robert McLelland and Richard Gold.

Bristol-Myers Survey Predicts Cancer Survival of 66% by AD 2000

A Louis Harris poll of 227 leading biomedical scientists commissioned by Bristol-Myers predicts that the Year 2000 "will initiate a new era in biomedicine in which physicians increasingly attack the roots rather than the symptoms of disease."

The scientists also predicted such advances as:

<>A vaccine for AIDS within 10 years, and a cure by the turn of the century.

<>An improved cure rate for cancer, with two out of three being cured by the Year 2000.

<>An "Age of Prevention" centered on a smokeless society which exercises more and eats less, when prevention and diagnosis do more to reduce heart disease and cancer than treatment.

<>The common use of a wide range of artificial devices, including implantable drug infusion systems, implantable hearing aids, artificial blood, and bones from bone banks.

The rise in the cancer cure rate over the next 13 years will result largely from the steady, piecemeal accumulation of knowledge, most of the scientists said, rather than from a single dramatic breakthrough.

But Bristol-Myers quoted NCI Director Vincent DeVita as saying that greater advances are possible.

"We are learning about the cancer cell at a rate that is almost alarming," DeVita said. "If there is a cancer cell headquarters somewhere, they should be frightened out of their wits, because we are doing things that nobody would have predicted 10 years ago."

Although they foresee an improved cure rate from the present level of 50 percent, cancer researchers in the study predict that prevention rather than treatment will be the principal weapon in reducing mortality of cancer by the Year 2000. The elimination of smoking will be one of the most important means of prevention, they predicted.

"With changes of diet and smoking, we could reduce the incidence of cancer in our society by 50 percent, said Robert Weinberg, Massachusetts Institute of Technology. "The big improvements in public health always come from prevention, not treatment."

The fundamental challenge that lies ahead is "understanding the metabolic pathways by which cells become cancerous," Weinberg continued. "You begin to think of cancer as a

breakdown in cell to cell communications. But, in a multicelled organism, individual initiative in growth can never be allowed, except in embryonic development. If one cell decides on its own to establish an autonomous growth network, it's almost by definition a cancer cell."

Researchers in the study predicted the greatest progress in treating such cancers as leukemia and Hodgkins disease. They said that forms of the disease such as cancer of the liver, pancreas and brain will continue to have a bleak prognosis.

Eight percent of the cancer researchers foresee an increase in the use of monoclonal and polyclonal antibodies ferrying drugs to one or more specific tumor sites without harming other cells. They also see increased use of other novel therapies including bone marrow transplants, interleukins and lymphokines. Probable new weapons will include differentiation agents, substances which curtail the uncontrolled growth of cancer cells by forcing the cells to reach maturity; and vaccines which guard against certain forms of cancer caused by viruses.

Although elimination of smoking was seen as the single greatest advance in preventing lung cancer, it was also cited as important in preventing other cancers.

"Keep in mind that when you talk about tobacco induced cancer, you're not only talking about lung cancer, which accounts for something like one quarter of all cancer deaths, but also head, neck, throat, bladder, pancreatic, and perhaps cervical cancer as well," said Frank Rauscher, senior vice president of research for the American Cancer Society and former NCI director.

Despite predicting a safe and effective vaccine for AIDS by the Year 2000, the scientists agreed that the cumulative number of AIDS cases in this country will top the one million mark by then.

AIDS was singled out as the disease most likely to be eliminated by the Year 2000, but only 19 percent in the survey see that as happening. Measles was next with 17 percent.

While 52 percent believe a cure for AIDS will be available by the Year 2010, a substantial 28 percent said they are a not sure and 15 percent said never.

The median forecast on AIDS incidence was slightly above one million cases. But 50 percent were unwilling to hazard a forecast at all, and 10 percent predicted five million cases by the turn of the century.

Workers Ignorant Of Benzidine Risk, Union Official Tells Congress

As many as 100,000 current and former textile workers are ignorant of the fact that they face an abnormally high risk of developing bladder cancer because of their on the job exposure to cancer causing dyes, a union leader told Congress last week.

In testimony before the Health & Safety Subcommittee of the House Committee on Education & Labor, Jack Sheinkman, secretary treasurer of the Amalgamated Clothing & Textile Workers Union (ACTWU) said that apparel, textile and leather workers have been exposed for decades to dyes made from benzidine, one of the most powerful cancer causing chemicals used in industry.

Calling on Congress to enact the High Risk Occupational Disease Notification & Prevention Act now before it, Sheinkman said that government, industry and union efforts so far have failed to offer workers information and protection from benzidine dyes. Government, he said, has not mandated action, and major employers have been reluctant to undertake the effort on their own. The union initiated program, he said, was not successful because of the lack of employer support and because the union did not represent a majority of workers or have access to retirees it formerly represented.

The High Risk legislation would establish a mechanism involving the government and employers to identify high risk workers, notify them of their risk and provide a system of referral, consultation and medical care.

Sheinkman said that despite the fact that benzidine itself has been known to cause bladder cancer since 1895, and is controlled by state and federal law, there are no controls on dyes made from benzidine and "employers have continued to assign workers to use them under dangerous conditions."

ACTWU petitioned the Occupational Safety & Health Administration in the 1970s to reduce production and importation, which was done. However, workers who had been exposed were not told about the risk nor offered medical surveillance, Sheinkman said.

RFAs Available

RFA 87-CA-20

Title: Early diagnosis and quantitative assessment of prostate adenocarcinoma by ultrasonography,
Application receipt date: June 15
Letter of intent: April 17

The Div. of Cancer Prevention & Control of NCI through the Organ Systems Program invites research grant applications from organizations capable and interested in participating in a network of collaborating institutions charged with carrying out studies on the early diagnosis and quantitative assessment of prostate adenocarcinoma.

This request for applications will be utilized to initiate studies which will be implemented through a collaboration among the successful applicant organizations. NCI proposes to encourage up to five existing prostate research laboratories or clinics with ultrasonography capabilities to assemble the expertise and patients needed to study early diagnosis of prostate cancer. The main goal is to determine the capability of ultrasound used alone or in combination with biological markers to diagnose early prostate cancer, to measure the volume of cancer tissue and determine its potential invasiveness, and to measure the impact of these procedures on survival by following patients over time.

Studies have indicated that when diagnosed early, and prior to capsular invasion, the cure rate for prostate cancer is potentially improved. In addition, it has been reported that tumor volume is associated with capacity to metastasize. At present, there is general consensus that among imaging modalities currently available, ultrasonography offers the greatest potential for early diagnosis and volume assessment of prostate carcinoma.

It is the intent of this RFA to initiate network studies among organizations for the purpose of evaluating ultrasonography in diagnosing early prostate cancer using uniform and standardized approaches and techniques. At the time of submission, a core of qualified investigators, technical expertise, patient populations, and facilities should exist in the application organization and any proposed affiliates.

Applications are encouraged but not required to submit letters of intent and to consult with NCI staff before submitting applications. Letters of intent are requested by April 17. The letter of intent will not enter into the review of a subsequent application.

Awards may be made to domestic nonprofit and for profit organizations. An applicant may apply for a period of support up to three years. It is anticipated that up to five awards will be made at an annual cost of approximately \$600,000.

For copies of the complete RFA and further information, contact Andrew Chiarodo, PhD, Organ Systems Section, Cancer Centers Branch, DCPC, NCI, Blair Bldg Rm 717, Bethesda, MD 20892, phone 301-427-8818.

NCI CONTRACT AWARDS

Title: Transplacental carcinogenesis and tumor promotion in old world monkeys
Contractor: SEMA Inc., \$1,918,970

Title: Detailed drug evaluation and development of treatment strategies for chemotherapeutic agents
Contractor: Southern Research Institute, \$\$2,062,324

The Cancer Letter — Editor Jerry D. Boyd

Associate Editor Patricia Williams

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