THE CANCER NEWSLETTER

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NATIONAL CANCER SURVEY DATA AVAILABLE SOON; NCI WILL INVITE INVESTIGATORS TO PREPARE ANALYSES

Massive amounts of data collected in the Third National Cancer Survey conducted by NCI will soon be available to investigators and almost certainly will provide a rich background for new epidemiological and etiological studies. NCI said that investigators will be invited to prepare analytic reports on specific segments of the survey. Computer tapes will be made available after editing to safeguard confiden-

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In Brief

MAGNUSON SUBCOMMITTEE INCREASES NCI, NIH BUDGETS DESPITE TRIMMING LABOR-HEW BILL BY $250 MILLION

NEITHER CANCER nor biomedical research in general will lose any money as a result of the Senate Labor-HEW Appropriations Subcommittee's decision to trim $250 million from the bill already approved by the House. That decision, reported by the *Washington Post* last week, resulted from an about-face by Senate liberals who now feel that the inflation problem has top priority and that Congress has to come up with a balanced budget for the 1975 fiscal year. Subcommittee Chairman Warren Magnuson (D-Wash.) would not permit cuts in the NIH budget, however. *The Cancer Newsletter* has learned that the subcommittee will recommend to the full Appropriations Committee an increase of $400 million over the House bill for NIH and $60 million more for NCI, for a total of $720 million to NCI. A split-it-down-the-middle compromise would give NCI $690 million, $90 million more than called for in the Nixon budget. The $250 million reduction would come out of welfare, education and perhaps labor appropriations . . . . **CASPAR WEINBERGER** will be the first cabinet member to be replaced by President Ford, one Administration source was quoted as saying last week. Another said Labor Secretary Peter Brennan will be the first to leave. Weinberger told Ford he would stay as long as needed, but the source indicated that the President will not pressure the HEW secretary to stay if he offers his resignation soon. Ford wants gradually to place his imprint on the Administration and he would like to have someone at HEW with a better feeling and understanding for Congress . . . . **VINYL CHLORIDE** ban already ordered by FDA and the Environmental Protection Agency for cosmetics and pesticides has been extended by the Consumer Product Safety Commission to include aerosol sprays for paints, paint removers, adhesives and solvents . . . . **HEW COULD** cut more than $50 million from its "overhead bureauracracy," Sen. Charles Mathias (R-Md.) has charged. Travel, expense accounts, new positions and funds for the professional standards review program could be cut that much, said Mathias, who is up for reelection this year . . . .

SURVEY PRODUCES DATA ON HISTOLOGY, TREATMENT, HOSPITALIZATION, COST

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tiality of medical records.

The survey was conducted by the Div. of Cause & Prevention's Biometry Branch under the direction of Sidney Cutler, associate chief of the branch. Cutler and staff members Joseph Scotto, Susan Devesa and Roger Connelly prepared an overview of the survey which will be published in an upcoming issue of the *Journal of the National Cancer Institute.*

The survey collected demographic and medical information on all cancers newly diagnosed during the three-year period 1969-71 in seven metropolitan areas and two entire states. The metropolitan areas were Atlanta, Birmingham, Dallas-Fort Worth, Detroit, Minneapolis-St. Paul, Pittsburgh and San Francisco-Oakland. The states were Colorado and Iowa. Population of the survey areas is 21 million.

A total of 181,027 new cancers were diagnosed during that period, not including in situ carcinomas and non-melanoma skin cancer. Extrapolation of that figure to the entire U.S. indicates that at least 610,000 cases of cancer are diagnosed each year.

The survey presents data on cancer incidence by primary site, by sex, and by race. A major feature of the survey data is the availability of detailed histology for each reported malignancy.

The survey also included a 10% sample on which data were gathered pertaining to the duration and cost of hospitalization, sources of payment, extent of disease at diagnosis, and treatment. A special six-month survey on the incidence of non-melanoma skin cancer was also conducted.

Some of the major findings include:

– Men have more cancer than women, particularly in blacks.

– The incidence of cancer is tending to become uniform across the U.S.

– The cancers which attack women occur earlier in life than those which attack men.

– The most frequent site of cancer (excluding non-melanoma skin cancers) is the large intestine (colon plus rectum).

– 75% of all cancers occur in only 10 anatomical sites.

– Among males, blacks have high rates of cancer of the prostate, lung, esophogus, stomach, and pancreas, while whites have excesses of bladder and large intestinal cancers.

– Among females, whites have more cancers of the breast and of the uterine corpus than black woment, who have more cancers of the uterine cervix.

– The lifetime probability of developing cancer is about 25% (excluding non-melanoma skin cancers and carcinomas in situ).

– The average length of inpatient hospital stay was 16 days.

– There were two groups of patients who had only one hospital admission – those who died soon after diagnosis and those who lived beyond the two-year period of observation in this study.

– Medicare and other government programs now pay almost half of all hospital costs of cancer patients.

– Non-melanoma skin cancers among whites are the most frequently occurring cancer in both males and females, affecting an estimated 300,000 people in the U.S. each year.

Data was collected on cancer incidence among racial groups other than white and black, including Chinese, Japanese, and American Indians, and will be available on request.

Unexplained regional differences exist, the report notes. The San Francisco-Oakland area was highest and Colorado was lowest. In the 1947-48 survey, the range of incidence rates from highest to lowest area was 117. In the new survey the range has narrowed to 57. This overall narrow range in rates could mask large variations among areas in the incidence of specific forms of cancer in various subgroups of the population; these need to be examined in detail, the report says.

A unique feature of the new survey is the classification of each malignancy according to a morphology index which allows for over 200 pathologically distinct cell types.

With availability of current, reliable incidence data from the survey, and with mortality and life table data from the National Center for Health Statistics, new estimates of the lifetime probability of developing cancer may be calculated. Excluding carcinoma in situ and non-melanoma skin cancer, the probability at birth of developing cancer during a lifetime is 24.6% for all persons. Probabilities of developing specific forms of cancer can also be calculated – 5.8% for lung cancer in males, 7.2% for breast cancer in females.

Hospitalization and cost figures showed that the average payment per admission for patients under 65 years of age was $1,263. The patient or insurance carriers made 83% of the payments. Among patients 65 and older, the average payment per hospitalization was $1,522. Medicare contributed to payment for 94% of all hospitalizations in the older group and paid 83% of the costs. Overall, Medicare, Medicaid and welfare paid 45% of the payments to hospitals for all patients. These figures reflect only actual payments to hospitals rather than charges, and do not include payments to physicians or any outpatient payments.

A 10% random sample of all cancer cases active during the three-year period was taken to develop information on treatment. Medical details include extent of disease, surgical procedures, chemotherapy, and radiotherapy. It incorporated all available in-

formation on the spread of cancer from the date of diagnosis through the following four months.

Examples of the information available on treatment and extent of disease are shown in the report for cancer of the sigmoid colon and acute leukemia. These data are for cases newly diagnosed in 1969 only and need to be supplemented before any substantive conclusions are drawn, the report comments.

Of the 178 patients with invasive cancer of the sigmoid colon, 63 had localized disease, 55 had direct extension of the primary cancer to adjacent tissues or metastasis to regional lymph nodes, and 49 had distant metastasis. Of the 118 without distant metastasis, 102 had their cancers surgically removed by total or subtotal colon resection and 6 by local excision. More than half of the 49 patients with distant metastasis were treated by resection.

One third of the 73 patients with acute leukemia reported on were children under 15 when diagnosed. Of these, 60 received chemotherapy within two months of diagnosis. Most commonly used drug, alone or in combination, was prednisone (others are shown in the report). Forty-six of the 60 were treated with drug combinations.

NCI is preparing a monography providing detailed data by primary site, sex, race, age, and geographic area which will include detailed information on histologic type.

MORE RFPs COMING ON X-RAY IMAGING FOR EARLY DIAGNOSIS, INCLUDING SOUND

Additional RFPs designed to improve x-ray imaging in the early detection of cancer will be forthcoming from NCI's Div. of Cancer Biology & Diagnosis.

The first series of RFPs now available dealt with algorithms for x-ray and nuclide reconstruction and systems for improved x-ray imaging and computerized transaxial reconstruction (*The Cancer Newsletter,* July 26 and Aug. 2). Improved hardware and software is the primary goal of this series.

Future RFPs will deal with other aspects of the problem, including ultrasonic imaging.

Systems presently are available for computerized transaxial reconstruction of brain lesions. Other systems are under development which will extend this technique to the torso. NCI is concerned that the cost of the systems now available – about $300,000 – puts them beyond the reach of many radiological centers. However, cost reduction is not a factor in the current RFP series. Their goals are to:

– Improve the detection, localization and diagnosis of lesions.

– Reduce radiation hazard to the patient without loss of resolution in reconstruction.

– Minimize the deleterious effects of distortion and artifacts.

NCI is looking for an x-ray imaging machine with the capability of providing a transaxial reconstruction scan within the 10-second breath holding interval.

Reduction of radiation scatter in x-ray imaging is also required to permit detection of smaller tumors. The RFP dealing with this asks the contractor to develop a system which eliminates the need for grids and air gaps and operates within a clinically useful range of exposure times and delivered dose.

NCI believes that nuclide reconstruction is particularly promising "for structure-specific labeling by an enormous number of natural and artificial radioactive compounds." It permits not only static reconstruction, but quantitative estimates of the time-course of labeled compounds through structures deep within the body.

Using nuclide transaxial reconstruction, radioactivity can be isolated in very small body parts that would be obscured by overlying and underlying radioactivity in conventional views.

NCI also anticipates breakthroughs in ultrasonic imaging. One such breakthrough may be the real time, three-dimensional ultrasonic imaging system being developed at Stanford under a government grant.

The preliminary model is "really great, but it is about a year away," according to one source who has seen the system in operation. Essentially it is a novel acoustic image sensor which uses a multiplexed area array of transducers operating in a transmit-receive mode.

Contract Awards

TEXAS GROUP RECEIVES $472,000 TO MONITOR ASBESTOS WORKERS

NCI's Cancer Control Program and Div. of Cause and Prevention announced the award of a contract to monitor 878 former Tyler, Texas asbestos workers who are at excess risk of developing lung cancer and other asbestos-related diseases.

The individuals in this demonstration project are all former employees of an asbestos plant in Tyler which operated from 1954 to 1972.

The contract, with the Texas Chest Foundation/ East Texas Chest Hospital at Tyler, is funded at $472,289 for the first two years. The hospital will attempt to identify characteristics signalling the development of lung cancer which may lead to earlier detection of the disease in a population at high risk.

Subjects will be encouraged to come to the hospital every six months for a two-hour battery of tests, including physical examination, chest X-ray, and sputum cytology. Additional procedures will include development of comprehensive medical histories, a measurement of the breathing capacity of each worker's lungs, and collection of blood samples from each individual to be stored for special immunologic and biochemical evaluations.

The Tyler workers' exposure to asbestos may be similar to that of employees of a predecessor asbestos plant in Paterson, New Jersey. In 1954, the Paterson plant, including the equipment and processing procedures, was moved to Tyler. In employees of the Paterson plant, the mortality due to lung cancer is six times higher than the national average. The rate is by far highest in asbestos workers who smoke cigarettes.

George A. Hurst, superintendent of the hospital, is the project director. S. Donald Greenberg, associate professor of pathology and director of cytopathology at Baylor, will review sputum cytology samples in a special laboratory at the hospital. The Univ. of Texas Health Science Center at Dallas and M. D. Anderson will serve as consultants on the project.

Under a special subcontract, Irving J. Selikoff, Mt. Sinai School of Medicine in New York, will correlate findings of asbestos exposure and disease among the Tyler workers with his research on cancer among 1,560 asbestos workers in Paterson.

Other contract awards:

Title: Development and production of clinical doses of antitumor agents
Contractor: Ben Venue Laboratories Inc., Bedford, Ohio, $1,223,538.

Title: Production center for inbred and hybrid rodents
Contractor: Southern Animal Farms, Prattville, Alabama, $55,236.

Title: Axenic genetic center - Inbred & hybrid rodents
Contractor: Charles River Breeding Laboratories, North Wilmington, Mass., $183,414.

Title: Operation of genetic center for rodents in biocontainment environments
Contractor: Texas Inbred Mice Co., Houston, $42,550.

Title: Operation of a primary center for inbred and outbred rodents
Contractor: ARS/ Sprague-Dawley, Madison, Wisc., $130,317.

Title: Development of a simple, quick, accurate method of the detection of small amounts or more of human blood in human feces
Contractor: Mount Sinai School of Medicine, $156,698

Title: Exploration of the use of a proton beam in tissue densitometry
Contractor: Atomic Energy Commission/Lawrence Berkeley Laboratory, $125,000

Title: Hormone markers for the detection and diagnosis of cancer
Contractor: Harbor General Hospital, Torrence, Calif., $476,014

Title: Immunological, enzymatic and other biochemical markers for detection of abnormal cervical cells on slides or in suspensions by optical methods
Contractor: Polysciences Inc., Warrington, Pa., $158,270

Title: Develop and evaluate new approaches to the problem of markers applicable to gynecologic cytopathology specimens
Contractor: Institute for Medical Cell Research, Karolinska Institutet, Stockholm, Sweden, $98,000

Title: Research into computer accessed bibliographic and citation data
Contractor: Institute for Scientific Information, Philadelphia, $13,140

Title: Studies and investigations of the diagnostic value of gynecologic cytopathology samples
Contractor: Univ. of Chicago, $77,030

Title: Central statistical group for collaborative studies in lung cancer, pancreatic cancer, and EMI scanner evaluation (brain cancer)
Contractor: Univ. of Cincinnati, $904,436

Title: Maintain an animal holding facility and provide research services
Contractor: Pharmacopathics Research Laboratories, Laurel, Md., $96,500

Title: Study for an operational impact evaluation system at NCI cancer centers
Contractor: CDP Associates Inc., $38,168

Title: Biochemical markers or enzyme changes that may presage the presence of cancer
Contractors: SUNY Research Foundation, $227,491; Stanford Univ., $88,108

Title: Clinical evaluation of the use of computerized transaxial tomography in the diagnosis of brain tumors
Contractors: Mayo Foundation, $394,645; George Washington Univ., $296,132; Cornell Univ., $119,637; Mass. General Hospital, $119,935; Columbia Univ., $328,709

Title: Develop and evaluate new methods for obtaining monodisperse cell preparations of gynecologic cytopathology specimens in suspension
Contractors: Montefiore Hospital, New York, $535,121; SUNY Research Foundation, $209,029

Title: Development of methods of bowel preparation preparatory to barium enema or colonoscopy
Contractors: Univ. of Rochester, $102,406; American College of Radiology, $173,155

Title: Nuclear magnetic resonance to be studied in neoplastic and non-neoplastic tissues
Contractors: Johns Hopkins Univ., $107,727; SUNY Research Foundation, $200,000; Baylor College of Medicine, $156,994

Title: Develop methods for detecting pancreatic cancer at an early or small stage prior to the presence of metastases
Contractors: Memorial Hospital, New York, $153,293; Mayo Foundation, $508,718

Title: Drug distribution and inventory system
Contractor: Value Engineering Co., Alexandria, Va., $42,667

Title: Development and evaluation of new stains and other optical markers useful for cytopathologic specimens in suspension
Contractor: U. S. Atomic Energy Commission, $331,670

Title: Vaginal-cervical cell sample sources for cytology automation
Contractor: Temple Univ., $66,042

SOLE SOURCE

Proposals listed here are for information purposes only. RFPs are not available.

Title: Studies of molecular events to transformation by RNA oncogenic viruses
Contractor: Litton Bionetics Inc.

Title: Inter and intraspecies identification of cancer cell in vitro
Contractor: The Child Research Center, Detroit

Title: Role of oncogenic viruses in the causation of cancer in man
Contractor: Calif. Dept. of Health

RFPs AVAILABLE

Requests for proposal described here pertain to contracts planned for award by the National Cancer Institute, unless otherwise noted. Write to the Contracting Officer or Contract Specialist for copies of the RFP. Some listings will show the phone number of the Contract Specialist, who will respond to questions about the RFP. Contract Sections for the Cause & Prevention and Biology and Diagnosis Divisions are located at: NCI, Landow Bldg. NIH, Bethesda, Md. 20014; for the Treatment and Control Divisions at NCI, Blair Bldg., 8300 Colesville Rd., Silver Spring, Md. 20910. All requests for copies of RFPs should cite the RFP number. The deadline date shown for each listing is the final day for receipt of the completed proposal unless otherwise indicated.

RFP NCI-CB-53883-37

Title: Investigation of possible correlations between dietary factors and epidemiological characteristics of breast cancer
Deadline: Nov. 1, 1974

NCI is soliciting proposals from organizations having capabilities of carrying out dietary/nutritional studies in relation to the epidemiology of human mammary cancer to determine whether dietary factors are of relevance to the etiology of breast cancer.

Studies may be case-control (retrospective) or cohort prospective on homogeneous or heterogeneous population groups; however, it is important that high and low risk groups should be included for comparative purposes. Anthropometric data will be obtained and wherever possible biochemical and other laboratory studies will be incorporated.

Contracting Officer: H. P. Simpson
Biology & Diagnosis
301-496-5565

RFP NCI-CB-53884-37

Title: Investigations on the effect of exogenous estrogens on the occurrence and natural history of breast cancer
Deadline: Nov. 1, 1974

NCI is soliciting proposals from organizations having the capabilities to evaluate the long-term effects of non-contraceptive exogenous estrogens given to women with special reference to the risk of developing breast cancer. Such estrogens may have been given for any purpose other than for contraception, such as postmenopausal conditions which require estrogen therapy, etc.

Contracting Officer: H. P. Simpson
Biology & Diagnosis
301-496-5565

RFP NCI-CB-53854-37

Title: Investigations of possible correlations between morphological and epidemiological characteristics of breast cancer
Deadline: Nov. 1, 1974

NCI is soliciting proposals from organizations having capabilities of refining or improving the morphological classification of human mammary carcinoma and evaluating this in relation to epidemiological variables in the general population.

The relationship between the defined morphological characteristics and histological classification of breast cancer will be analyzed with regard to specific epidemiological factors associated with breast cancer, extending this analysis to stage at diagnosis and survivorship if possible.

Contracting officer: H. P. Simpson
Biology & Diagnosis
301-496-5565

RFP NCI-CP-VO-53510-54

Title: Provide administrative services and assistance as support to the NCI viral oncology staff in the organization and conduct of conferences, seminars and meetings on various aspects of cancer cause and prevention and viral oncology

Deadline: Oct. 3, 1974

To be included in these support services will be such tasks as arranging for travel, accomodations and meeting facilities, and direct misc. support to the director, DCCP, and associate director for viral oncology, NCI. Also involved will be the preparation of:

– Background materials for use at the meetings.

– Reports for the coordination and dissemination of scientific data presented at the meetings and

– Proceedings suitable for reproduction in journals and other communication media.

The contractor will not be responsible for generating any scientific or technical data but, to be effective, its key personnel should be experienced in the areas of: visual reproduction; publication techniques (including taping, transcription and editing); scientific terminology and procedures; and the organization and conduct (including mass mailing list facilities) of large conferences.

In view of the "quick-reaction" responses associated with the project, it is essential that the offeror's facilities from which operations will be conducted be within a 60-mile radius to the NIH campus at Bethesda, Md.

Contract Specialist: J. T. Lewin
Cause & Prevention
301-496-1781

RFP NCI-CM-43740

Title: Synthesis of coordination compounds as potential antitumor agents

Deadline: Nov. 1, 1974

The Drug Development Branch is seeking organizations having capabilities, resources and facilities for the synthesis of unique platinum and other metal containing coordination compounds with potential as antitumor agents. The objective of the project is to synthesize coordination compounds of unusual types and in great variety which may be of value in cancer chemotherapy.

Experience in the proposed chemical area is required. Laboratories are to be equipped with modern equipment and facilities for synthesis and analysis of compounds. Library resources must be adequate and readily available.

Fully characterized 3 to 5 gram samples will be prepared and submitted to NCI for antitumor evaluation.

It is anticipated that this contract will involve a two technical man-year per year effort. The principal investigator should be trained in coordination chemistry at the PhD level from accredited schools, and experienced in the synthesis of coordination compounds with a variety of organic ligands. He must be named and available to the project a minimum of 20% of his time. All technical supporting personnel are required to be trained chemists. They must devote at least 50% and preferably 100% of their time to the project.

The RFP will be available on or after Sept. 16, 1974.

Contract Specialist: S. R. Gane
Cancer Treatment
301-427-7463

RFP NCI-CM-53769

Title: Resynthesis of bulk chemicals and drugs

Deadline: Oct. 14, 1974

NCI's Drug Development Branch is seeking organizations having capabilities, resources and facilities for the preparation of bulk chemicals and drugs. The objective of this project is the preparation by synthesis or extraction and isolation from natural sources of quantities of bulk chemicals and drugs (1 gram to multikilogram), for use as potential anticancer agents.

The major emphasis will be on the preparation of the desired materials in laboratory scale and will involve resynthesis and scale-up from the chemical literature. Methods will be available for small scale runs in many but not all instances. Process development for scale-up will be required.

The facilities must have the capacity for performing all types of chemical synthesis, including access to pilot plant equipment (minimum of a 50 gallon reactor required). All products must be completely assayed as to identity and purity. A well instrumented analysis and adequate library facilities must be available.

The principal investigator must be trained in organic chemistry, preferably at the PhD level or equivalent, from an accredited school with extensive experience in chemical synthesis and process development. The principal investigator must be named and all technical personnel must be assigned to the project a minimum of 50% of the time, preferably 100% of the time.

It is anticipated that such a project will require a minimum of 10 technical man-years of effort per year. The effort may be undertaken in levels of either 5 or 10 technical man-year contract(s). The proposal may be at either level of effort and should clearly indicate the level(s) being proposed.

Contract Specialist: W. T. Harris
Cancer Treatment
301-427-7463

The Cancer Newsletter—*Editor* JERRY D. BOYD

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