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HCFA RESPONSE ON DRGs AND CLINICAL RESEARCH THREAT CALLED A "STONE WALL;" LEGISLATIVE REMEDY SOUGHT

The response by Health Care Financing Administration Administrator Carolyne Davis to the concerns of those who fear the prospective payment reimbursement system threatens to severely

(Continued to page 2)

In Brief

ZUBROD "ONE PERSON WHO MADE THE DIFFERENCE" IN DRUG PROGRAM, DEVITA SAYS IN CENTER'S 25TH

NCI DRUG Development Program, started in 1950s when Congress overrode rejection by the National Advisory Cancer Council (predecessor of the National Cancer Advisory Board), has been a success, with the ability to cure more than a dozen cancers not curable prior to the availability of drugs, NCI Director Vincent DeVita wrote in the 25th anniversary issue of "Cancer Treatment Reports." DeVita continued, "As much energy was expended in the scientific community to stop cancer drug development as was exerted to get it off the ground." He said Gordon Zubrod, who headed the program as director of the Div. of Chemotherapy which later became the Div. of Cancer Treatment, was the "one person who meant the difference between success and oblivion for the cancer drug development program and cancer chemotherapy." Zubrod is director of the Florida Comprehensive Cancer Program at Univ. of Miami. The National Cancer Program, DeVita said, "has been an astonishing success—an investment that has already paid for itself while the best is yet to come"....**PAUL ENGSTROM**, chairman of medicine at Fox Chase Cancer Center, has been named vice president for cancer control and continuing education by President John Durant. Engstrom will be responsible for all Fox Chase educational programs, social science research and relationships with other physicians and health professionsals. He will continue practicing as a member of the department of medical oncology....**NCI IS SEARCHING** for an associate director of the Div. of Cancer Treatment to head the Biological Response Modifiers Program. The Senior Executive Service position has responsibility for extramural and intramural components of the program, with three branches, 103 scientific and support personnel and a $20 million grant and contract budget. It pays $58,938 to $66,400, with up to $10,000 more for physicans. Contact Cynthia Kauff, NCI, Personnel Management Specialist, Bldg 31 Rm 3A08, Bethesda, Md. 20205, phone 301-496-6503. Ronald Herberman has been acting director since Robert Oldham left last year...**CORRECTION:** Trainees under the proposed NIH intramural program would be paid less, not more than those in the existing Research Fellowship Program, as reported in **The Cancer Letter** July 13.

DOLE'S HELP ASKED IN CORRECTING DRG THREAT WITH NEW MEDICARE LEGISLATION

(Continued from page 1)

curtail cancer clinical research "indicates we have struck a stone wall at HCFA. Undesirable as it may be to return to the scene of a previous battle, it now appears that only a legislative doorway will get us through," Topeka radiation oncologist John Travis wrote in a letter to Sen. Robert Dole (R.-Kan.), chairman of the Senate Finance Committee which would have primary responsibility in that body for any new Medicare legislation.

Dole promised Assn. of Community Cancer Center members last spring that if HCFA could not be persuaded to modify its regulations to permit more flexible reimbursement for patients on research protocols, he would consider new legislation requiring that action.

Davis made clear her adamant opposition to ACCC's proposal for a "DRG 471" for patients on clinical research protocols, to be added to the 470 diagnosis related groups under which Medicare reimbursement is now being conducted. Her opposition was stated in a letter to Sen. Quentin Burdick (D.-N.D.), who had written her on behalf of ACCC's concerns.

"The central issue... goes beyond the impact of the prospective payment system on hospitals participating in NCI's clinicala research programs," Davis wrote. "Rather, the larger question is whether Medicare funds should be used to support individual research programs and patients participating in them. You point out in your letter that patients involved in special treatment protocols require additional tests and monitoring and that such patients are also frequently hospitalized for longer periods than are patients not participating in such programs. You state that NCI pays for the data collection component of the research program and that Medicare should pay for the patient care component. As a rule the Medicare program pays for usual patient care. However, it has always been Medicare's policy that not only do we not pay for research costs, but also we do not pay for any extraordinary care required by research patients. The rules covering research costs have been unchanged since the inception of the program and provide that costs incurred for research purposes over and above usual patient care costs are not includable as allowable costs. Such care is defined as additional patient care days and additional ancillary services over and above what a nonresearch patient with the same diagnosis would require. Our transition to the prospective payment system did not alter our policies concerning recognition of costs associated with research. It is for this reason that we believe the current issue presents a larger question concerning the role of the Medicare program rather than just a problem in the implementation of prospective payment.

"You also state that you believe ACCC's proposed creation of DRG 471 has merit and you urge consideration of it. However, we believe there are difficulties with this proposal which leave the underlying question unaddressed. First, the proposed category would not constitute a DRG, which by its very definition is a group of closely related diagnoses. As we understand the proposal, DRG 471 would be comprised of research patients with all forms of neoplasms (as proposed by ACCC), or as suggested by others, a patient with any diagnosis if he is under an approved research protocol. Under the current prospective payment system, each DRG is assigned a weighting factor based on the average length of stay and the average cost of treating a patient with that particular diagnosis. With the widely varying diagnoses which could be assigned to DRG 471, such a weighting factor could never be fairly derived. Instead, ACCC has proposed that cases assigned to DRG 471 be reimbursed on a cost basis as was done before the prospective payment system was implemented. This would mean, however, that hospitals would be paid by Medicare under two payment systems—prospective payment based on DRGs for some diagnoses and retroactive cost based reimbursement for others. Such a system would require that hospitals establish and maintain complex accounting records to sort out costs and charges according to individual cases and file more complicated annual cost reports. In order to accurately determine costs for patients in DRG 471, hospitals would have to separate out costs in each of their cost centers for individual research patients. Although this would result in separate cost finding for certain patients, it would not deal with the general issue of nonallowability of research costs under Medicare. A dual payment system, as proposed, would also permit hospitals to select the most financially advantageous method of payment before billing the Medicare program.

"A separate DRG for research patients would distort the weighting factors and lengths of stay for the remaining DRGs. By reassigning the patients who are presumably the most likely to have extended stays, the remaining DRGs would not accurately reflect a true measure of the costs of confinement for the overall range of cases in those hospitals which happen not to be engaged in clinical trials but still encounter patients who might have qualified for such trials in another setting.

"A major premise of the prospective payment setting is that payments would be based on a patient's diagnosis and a hospital would know in

advance how much its Medicare payment would be. Assignment of a separate DRG for research patients would mean that payment would be based on the type of treatment the patient is receiving rather than on the diagnosis. Cost based reimbursement for certain patients would destroy the predictability of Medicare payment and create overwhelming administrative burdens for hospitals and the Medicare program.

"While I certainly agree that legitimate clinical research at the community level should not be discouraged, I do not believe the creation of a research DRG is feasible or desirable. It conflicts with Medicare's historical position that the trust funds should not be used to support research efforts, efforts which receive major funding from other government and private sources."

In his letter to Dole, Travis said, "It is patently apparent that HCFA, regardless of good arguments to the contrary, has no intention of giving recognition to the extra costs incurred in community hospitals which participate in recognized clinical research protocols. . . It is difficult to make the point with Dr. Davis and her colleagues that the funds alloted for clinical research by NCI do not cover the costs of the vast majority of participating institutions and physicians in any thing more than a token manner. It is perhaps emblematic of the times that the administrator of the third largest third party payor expresses neither regret nor constructive suggestion on the issue, but rather contents herself with the recital of objections she draws from both the law and her own interpretation of administrative complexities (which can be argued). Perhaps saddest of all is Dr. Davis' statement that 'legitimate clinical research at the community level should not be discouraged.' In the context of her surrounding remarks, this has an almost cynical ring."

Robert Clarke, president of Memorial Medical Center in Springfield, Ill., in a letter to ACCC President John Yarbro, answered points made by Davis:

1. The issue extends beyond cancer patients.

"Carolyne Davis' comment is precisely correct and suggests that we should not develop ACCC's position in a vacuum. Already, the efforts directed at the inequities of the DRG prospective pricing system are fragmented. For example, at least one special interest group is addressing the problem of dedicated burn centers. We should align our efforts closely with other organizations with similar interests."

2. Medicare payment is restricted to cost of usual patient care which excludes research costs and the extraordinary care required by research patients.

"Again, Dr. Davis is correct. We therefore run the risk that the Medicare program will reassess its current levels of reimbursement if our proposal gainst momentum. The only argument we have is that Medicare has knowingly included these costs since the inception of the program."

3. A DRG is by definition a group of closely related diagnoses and DRG 471 includes all forms of neoplasms.

"The DRG system implemented by HCFA groups substantially dissimilar diagnoses. Numerous examples can be given. Additionally, this argument would be overcome if we proposed a separate cost adjustment for each DRG which includes a neoplastic diagnosis. This alternative may be preferable and would be case mix sensitive."

4. A single weighting factor could never be fairly derived.

"A single weighting factor could certainly be derived using the same methodology used by HCFA for the development of the DRG weighting factors. However, using the same methodology, we could develop an adjusted weighting factor for each neoplastic related DRG."

5. Complex accounting records would be required of hospitals including the separation of costs in each cost center for individual research patients in order to support two payment systems—prospective and retroactive cost based reimbursement.

"ACCC proposes a one time analysis resulting in a prospective cost adjustment. This does not require the complex accounting cited by Dr. Davis."

6. Adverse selection of payment methods would occur as hospitals selected the most advantageous method of payment (retrospective cost reimbursement vs. DRG 471).

"The total national impact of this proposal, assuming approximately 30,000 patients entering clinical trials each year at $2,000 each for 'extraordinary care' is $60 million. This amount, which includes non Medicare patients, represents .1-.2 per cent of the total annual Part A Medicare payment of $35-40 billion. Additionally, HCFA has created precedence with respect to the selection of reimbursement methodology in the case of rehabilitation centers, psychiatric units and other specialized units."

7. The weighting factors and length of stay for the remaining DRGs would be distorted.

"Not only is the impact referenced here minimal, but the same methodology proposed by ACCC could be used to adjust the weighting factors of the DRGs in order to 'assure budget neutrality.'"

8. Hospitals not engaged in clinical trials but having similar patients would be penalized.

"Indeed! If 'other hospitals' are engaged in 'extraordinary care' what purpose could be intended

except research and if so, why should such research not be approved by appropriate governmental agencies?"

9. The predictability of Medicare's cost would be lost.

"Once again, the national payment impact would be minimal. Additionally, we are proposing the identification of a 'prospective cost adjustment' and the number of clinical trial patients to which it would be applied should be predictable within reason."

10. Hospitals and the Medicare program would experience 'overwhelming administrative burdens.'

"Not from our perspective, but it is encouraging that for the first time Medicare appears to be sensitive to this problem."

A former HCFA executive who helped draft the prospective payment regulations told members of the Assn. of American Cancer Institutes that Medicare "probably" has paid for much of the extra patient care costs from research in the past.

Michael Maher, now with the accounting firm of Coopers & Lybrand in Philadelphia, discussed prospective payment issues with AACI members at their annual meeting in New York.

"Medicare always has paid for acute care of the elderly," Maher said. "Pure research costs have been excluded by law. In reality, they probably weren't. I think the problem probably has been in the cost reimbursement system that is has been difficult to discern how much can be attributed to research and how much to treatment."

Maher acknowledged that "community cancer centers are very unhappy with the current policy. Many of them are heavily involved in cancer research" but do not meet the requirements for exclusion from the prospective reimbursement system which were written to permit a few large comprehensive or clinical centers to be reimbursed on a reasonable cost basis.

"There are many hospitals which are making money off this new system," Maher said. "Some large teaching hospitals in the northeast are making a lot of money. A lot of hospitals are losing money. This has unleashed a tremendous energy in the industry. There are a tremendous number of new and innovative ideas. Some I'm sure are lousy. Some will fail, but a lot of them will succeed."

Maher predicted that adjustments in the program may include consideration of capital costs, now not permitted; payment of physicians; payment for inpatient services by physicians; outpatient costs; home health care; and skilled nursing.

"The worst thing you could do is to fail to look at this as an opportunity," Maher said. However, "as your profits grow, there will be pressures from the federal government and Congress to take some of it back."

John Durant, Fox Chase Cancer Center, said "The notion that the you can generate profits by caring for those not terribly ill, and that those who are very ill will produce losses, will lead to a two level system of care." He charged that DRG reimbursement for acute leukemia may adequately cover the cost of treating elderly patients who stay two days in the hospital and die but "is not related to the cost of caring for patients who stay 30 days and then go home, some of them cured."

Paul Carbone, Univ. of Wisconsin Clinical Cancer Center, said that "clinical research is looking for new and better treatments. Research is the way to cut down on costs."

"The best care is clinical research," Durant agreed. "You could make the argument that reimbursement should ber based on the cost of clinical research. Otherwise, we won't get clinical research or the best care."

Emil Frei, Dana-Farber Cancer Institute, suggested that the new reimbursement system "rewards failure."

Maher responded that he hopes the system will evolve so that that does not happen.

John Ultmann, Univ. of Chicago Cancer Center, said "the goals on how to measure reimbursement are all wrong. Chronic illness is a great deal more expensive than acute care. Cures return people to productivity and that brings in money to IRS. Perhaps we should reward states which reduce cancer mortality. We should emphasize rewards for curing people and returning them to productivity."

Ross McIntyre, Norris Cotton Cancer Center, suggested that the long term implications of the program have been overlooked. "We didn't think that rent control in U.S. cities would result in half the buildings being burnt down," referring to the prospect that many hospitals are destined to go out of business.

"There is no question that some hospitals will be reduced in size and some will close," Maher said. "There probably are too many hospital beds anyway."

"Our point of departure with you is that this has nothing to do with improving health care delivery," Paul Marks, Memorial Sloan-Kettering Cancer Center, said. "You can't sell it on this basis."

John Spratt, Univ. of Louisville, noted that lawsuits will be pursued relative to DRGs. "Is the government willing to be a defendant in a malpractice suit?"

"I doubt it," Maher said. "Congress is considering setting a cap on settlements."

Maher said that the government is in the process of putting together a commission which will oversee HCFA's administration of the reimburse-

ment program. "I assure you it will act independently of HCFA. How well it works depends on the quality of the membership."

ACOS SEEKS LOCATIONS, COSPONSORS FOR SEMINARS ON TUMOR REGISTRIES

The American College of Surgeons Cancer Dept. is seeking locations and cosponsors for four regional seminars it will present for tumor registrars on "Fundamentals of Tumor Registry Operations." The programs are designed for persons with less than two years of registry experience.

The Cancer Dept. would like to put on seminars in the Southwest in January, Southeast in February, Northwest in March, and Northeast in April, all in 1985. Cosponsors will be asked to provide a coordinator and various local arrangements. Organizations interested in being cosponsors may contact Deborah Jones, ACOS Cancer Dept., 55 E. Erie St., Chicago 60611, phone 312-664-4050.

RFA 84-CA-09
Title: Metabolism and physiology of retinoids and carotenoids in humans
Deadlines: Letters of intent, Aug. 10; applications, Oct. 5.

The Div. of Cancer Prevention & Control of NCI invites applications for cooperative agreements to support research on human metabolism and physiologic effects of retinoids and carotenoids. Studies of interest include metabolism in the intestinal mucosa, intestinal absorption, regulation of gastrointestinal uptake and tissue concentrations, and extra intestinal metabolism of those compounds. The studies should span a range of dietary intakes from RDA levels to levels suspected of being toxic. The proposed research requires innovative approaches to determine the dynamics of absorption and metabolism, target tissue levels, and specificities of the various vitamin A retinoids and carotenoids in cellular integrity and resistance to tumor promotion.

Applicants funded under this RFA will be supported through the cooperative agreement mechanism. An assistance relationship will exist between NCI and the awardees to accomplish the purpose of the activity. Recipients will have primary responsibility for the development and conduct of the research. NCI involvement will be in regard to coordinating and synthesizing the research effort as to approaches, methodologies and exchange of information.

Complete copies of the RFA and additional information may be obtained from Elaine Lanza, PhD, Diet & Cancer Branch, DCPC, Blair Bldg Rm 617, NCI, Bethesda, Md. 20205, phone 301-427-8753.

RFA 84-CA-14
Title: Involuntary exposure to tobacco smoke and cancer risk
Deadline: Oct. 15 for applications

In recent years some epidemiological studies have indicated an association between involuntary or passive smoking and an increased risk for cancer. The reactions to brief exposure to tobacco smoke in enclosed environments range for the nonsmoker from slight irritation of the eye to serious allergic reaction. The reaction usually disappears following a period free from exposure to tobacco smoke. Also reported is a dysfunction of small airways in nonsmokers chronically exposed to tobacco smoke. It has also been reported that nonsmoking subjects of either sex whose spouses were current smokers of at least 10g of tobacco a day had significantly lower forced mid-exploratory flow rate than those married to nonsmokers.

Many chemical substances of mainstream smoke have been reported in sidestream smoke, with some substances released into the sidestream smoke in markedly higher amounts than into the mainstream smoke. The actual absorption of individual smoke components by nonsmokers in smoke filled environments has been reported only for a few components. The pattern of involuntary inhalation of tobacco smoke is probably different from that of voluntary inhalation by the smoker. This difference would influence the site of deposition and absorption of smoke constituents in nonsmokers compared to active smokers. Therefore, the question arises whether a person exposed involuntarily and for many years to the smoke of others inhales sufficient amounts of carcinogens to elicit a carcinogenic response.

In recent years, a number of epidemiologic studies have been carried out to examine the influence of long term involuntary exposure to cigarette smoke in nonsmoking women. A large prospective study in Japan reported a significant increase in lung cancer risk among nonsmoking wives of smoking husbands compared with nonsmoking wives of nonsmoking husbands. Wives of husbands who smoked had a two fold excess of cancer mortality compared to wives of nonsmoking husbands, with suggestive evidence of a dose response relationship. A recent update of this study also reported an increased risk of cancer of the paranasal sinuses in nonsmoking wives of smoking husbands.

Two case control studies, one from Greece and the other from the U.S., supported the findings of the Japanese study. However, an analysis of prospective data from the American Cancer Society failed to show a statistically significant association between passive smoking by wives of smoking husbands and lung cancer mortality. This discrepancy may be partly due to differences in methodology of the two prospective studies, or differences between countries in the patterns of involuntary exposures to tobacco smoke.

A case control study from the U.S. reported that heavy smoking by wives may increase the lung cancer risk of the light smoking husband, but smoking by husbands did not significantly affect the risk in women who smoked. Moreover, it was noted that the smoking behavior of the mother, but not that of the father, influenced the lung cancer risk of offspring who smoked. Differences in the histologic distribution of tumors in active smokers and

those involuntarily exposed suggest that the differences in physicochemical nature and absorption of mainstream smoke and sidestream smoke may produce different proportions of histological types of tumors.

The purpose of this RFA is to stimulate research to assess the effect of involuntary exposure to tobacco smoke on cancer risk. Research of interest includes, but is not limited to (1) studies designed to quantify involuntary exposure to tobacco smoke. For example, the development of field testing of a questionnaire designed to measure involuntary exposure to tobacco smoke, with subsequent validation by appropriate means; (2) ad hoc refinement or modification of existing epidemiologic studies by addition of questions relating to involuntary smoke exposure; and (3) development of case control studies of tobacco related cancers in settings that lend themselves specifically to evaluation of the effects of involuntary tobacco smoke exposure.

Inquiries may be directed to Dr. A.R. Patel, Extramural Programs Branch, Epidemiology & Biostatistics Program, Div. of Cancer Etiology, NCI, Landow Bldg Rm 8C-16, Bethesda 20205, phone 301-496-9600.

RFA 84-CA-16
Title: Basic research in factors influencing nuclear magnetic resonance relaxation times in biological tissues
Deadline: Nov. 15 for applications

The Div. of Cancer Treatment of NCI invites investigator initiated grant applications for basic studies to elucidate quantitatively the factors and mechanisms which influence and determine the T1 and T2 NMR relaxation times in in vitro systems and normal and abnormal mammalian tissues.

Rapid progress has been made over the past several years in the development of new NMR imaging and spectroscopic techniques for research and diagnostic applications. There is a special need for a more scientific understanding of the imaging and tissue characterization information that is generated by these NMR systems.

The interdisciplinary nature of this study will require some combination of expertise included in, but not limited to, the areas of nuclear magnetic resonance phenomena; biophysics and biochemistry at molecular, cellular, tissue, organ, and whole body levels; in vitro cell and tissue cultuers; histopathology; animal and/or human physiology and pathology; and a probable variety of additional disciplines and instrumentation techniques as needed to study the complex substances and phenomena that are involved.

The objective is to encourage creatively designed basic experimental studies of the properties of biological materials and tissues in magnetic fields and of the physical and biological phenomena which influence and determine the T1 and T2 NMR relaxation times. The ultimate purposes of acquiring this knowledge are potentially to permit definitive noninvasive characterization of tissues by NMR and to enhance the abilities of NMR clinicians of the future to obtain superior imaging and tissue characterization information and to interpret its diagnostic significance.

The scope of studies needed to gain the insight desired will be determined by the ingenuity of the investigator and the experimental approach and will be limited principally by the bounds of reasonable cost. It may be limited to certain specific aspects of the problem or it may include a wide variety of subprojects ranging from molecular to whole organism studies. The complex biochemical nature of tissues suggests that fundamental studies of some simple in vitro and in vivo systems will be required to establish the basis for understanding more complicated biological systems. Proof of the knowledge achieved might eventually be demonstrated by obtaining quantitatively predictable NMR results in controlled scientific experiments with living tissues or in simpler systems.

The total project period for applications submitted in response to the present RFA should be typically three years as a balance between the longrange nature of this type of research and the exploratory character of the studies at this stage of development. Studies should not be proposed to exceed five years. The intent is to fund approximately four to eight projects, with total program costs for all grants under this RFA equal to approximately $750,000 of FY 1985 funds for the first year. This funding level is dependent on the receipt of a sufficient number of applications of high scientific merit. Although this program is included in the financial plans of NCI, the award of grants pursuant to this RFA is contingent upon the availability of funds for this purpose. The issuance of this RFA does not represent a guarantee that any funds will be awarded. No funds are available for the purchase of a large cost capital equipment.

Copies of the RFA may be obtained from Roger Powell, Program Director, Diagnostic Imaging Research Branch, Radiation Research Program, Div. of Cancer Treatment, NCI, Landow Bldg Rm 8C09, Bethesda 20205, phone 301-496-9531.

PROGRAM ANNOUNCEMENT
Title: Characterization of multidrug resistant human and other mammalian tumor cell lines.
Application receipt dates: Nov. 1, March 1, July 1

NCI is seeking grant applications for support of research projects to identify and characterize multidrug resistant tumor cells. The development of drug resistance in tumor cell populations treated with chemotherapeutic agents has been recognized as a major problem in cancer treatment. The Div. of Cancer Treatment desires to support research in this area in order to increase understanding of drug resistance phenomena and develop therapeutic strategies to overcome or circumvent the problem.

This announcement is specifically targeted to stimulate research in the area of multidrug resistance, also referred to as pleiotropic drug resistance (PDR). Detailed studies in Chinese hamster and murine cell systems have shown that under some selective conditions, e.g. colchicine, vincristine, or adriamycin treatment, cell popula-

tions demonstrating a multidrug resistant (PDR) phenotype emerge. In many of these cells, broad spectrum resistance to multiple agents of different modes of action is associated with reduced intracellular accumulation of drug and the appearance of a membrane glycoprotein marker. Recently, laboratory evidence has been presented that multidrug resistant cells also occur in human tumor cell populations. This latter evidence is consistent with clinical experience, particularly with previously treated patients, wherein resistance to multiple agents of different modes of action is observed.

While some potentially important collateral sensitivities to established antitumor drugs have been observed among mammalian cell types showing the multidrug resistant phenotype, it seems likely that new agents specifically useful in treating these resistant cells will be needed. Development of such agents will require additional insight into the mechanism(s) of PDR and an adequate number of well characterized multidrug resistant cell lines in which new agents can be studied. This announcement is intended to stimulate applications for grants which propose to develop and characterize multidrug resistant human or mammalian tumor cell lines which have potential for this purpose. The primary emphasis in applications submitted in response to this program announcement should be on elucidating the mechanism of resistance in multidrug resistant cell populations.

Multidrug resistant cells may be selected in vitro or derived directly from patients or animals bearing tumors which have been shown to be resistant to chemotherapy. While the specific approaches and methods for development and characterization of the resistant cells will be left to the applicant, it is suggested that the following areas be addressed in the application: mechanisms of multidrug resistance; stability of the drug resistant phenotype; extent of cross resistance; tumorigenicity of the drug resistant cells; and verification of the origin of the cells.

Applications should be submitted on form PHS 398, which is available in the grants and contracts business office at most academic and research institutions or from the NIH Div. of Research Grants. In space #2 on the first page of this form, indicate the title of this program announcement. Additionally, a brief covering letter should accompany the application indicating that it is being submitted in response to this program announcement. The original and six copies of the application should be submitted to Application Recept Office, Div. of Research Grants, NIH, Westwood Bldg Rm 240, Bethesda 20205.

For further information, contact Dr. Robert Shoemaker, Acting Head, Cell Culture Section, Drug Evaluation Branch, Developmental Therapeutics Program, DCT, NCI, Bethesda, Md. 20205.

NCI ADVISORY GROUP, OTHER CANCER MEETINGS FOR AUGUST, SEPT., FUTURE

Advanced Seminars in Dermatology—Aug. 1-5, Incline Village (Lake Tahoe), Nev. Contact Office of Continuing Medical Education, School of Medicine TB 150, Univ. of California, Davis 95616.

Second Terry Fox Cancer Conference--Aug. 2-4, Vancouver, B.C. Contact Univ. of British Columbia, Dept. of Anatomy, 2177 Wesbrook Mall, Vancouver V6T 1W5, Canada. omy, 2177 Wesbrook Mall, Vancouver V6T

Cancer Centers Support Review Committee--Aug. 2-3, NIH Bldg 31 Rm 6, open Aug. 2 8:30-9 a.m.

Cancer Therapeutics Program Project Review Committee--Aug. 6-7, NIH Bldg 31 Rm 8, open Aug. 6 8:30-9 a.m.. 6-7, NIH Bldg 31 Rm 8, open Aug. 6

Rocky Mountain Cancer Conference--Aug. 9-11, Fairmont Hotel, Denver. 38th annual conference for medical professionals. Contact Chris Heminway, RN, 303-758-2030, or American Cancer Society, 2255 S. Oneida, Denver 80224.

International Society for Experimental Hematology—Aug. 12-16, Atlanta. 13th annual meeting. Contact Dr. Ralph Vogler, Meeting Chairman, Emory Univ., Woodruff Bldg Rm 718, Atlanta 30322, phone 404-329-5830.

Florida Tumor Registrars Assn.—Aug. 15-17, High Q Quality Inn, Orlando. Annual workshop. Contact American Cancer Society, Florida Div., Tampa.

National Toxicology Program Board of Scientific Counselors--Aug. 16-17, National Institute of Environmental Health Sciences, Research Triangle Park, N.C.

Electrophoresis Society—Aug. 27-31, Gottingen, West Germany. 4th international meeting. Contact Prof. Dr. Volker Neuhoff, Max-Planck Institut fur Experimentelle Medizine, Hermann-Rein Strasse 3, D-3400 Gottingen.

Statistical Methods in Environmental Risk Assessment—Aug. 30-31, Kyoto, Japan. Contact Dr. Barry Margolin, National Institute of Environmental Health Sciences, Statistics & Biomathematics Branch, PO Box 12233, Research Triangle Park, N.C. 27709, phone 919-541-3460.

International Society of Hematology--Sept. 1-7, Buenos Aires. 20th Congress. Contact the Society, Viamonte 2008 (1056), Buenos Aires, Argentina.

Pediatric Hematology-Oncology Update--Sept. 5-7, Hoffman Auditorium, Memorial Sloan-Kettering Cancer Center, New York. Contact Charlene Landis, Conference Planner, Dept. of Continuing Education, MSKCC, 1275 York Ave., New York 10021, phone 212-794-6754.

President's Cancer Panel--Sept. 7, Terrace Room, Airport Hilton, San Francisco, 9 a.m.-4 p.m., open.

Centennial Symposium Planning for the Future--Sept. 7-9, Grand Hyatt Hotel, New York. For information, phone 212-794-6662.

Cellular & Molecular Aspects of Aging: The Red Cell as a Model—Sept. 8-11, Minneapolis. Contact Diane Konzen, Dept. of Lab Medicine/Pathology, Box 198, Mayo Memorial Bldg, Univ. of Minnesota, Minneapolis 55455, phone 612-376-8706.

European Congress of Radiotherapy—Sept. 9-15, Jerusalem. Contact E. van der Shueren, Dept. of Radiotherapy, Academic Hosp., 3000 Leuven, Belgium.

Conference on Immunity to Cancer--Sept. 10-12, Colonial Williamsburg Conference Center,

Williamsburg, Va. Cosponsored by NCI's Biological Response Modifiers Program and Monsanto Chemical Co. Contact Carole Kirby, BRMP, DCT, NCI, FCRF, Bldg 567 Rm 129, Frederick, Md. 21701, phone 301-695-1418.

Molecular Biology of Cancer Conference—Sept. 10-12, Boston Park Plaza Hotel. Contact Park Plaza at Arlington St., Boston 02117.

Oncology Nursing Conference VI—Sept. 12-14, Hyatt Regency Hotel Downtown, Houston. Contact Office of Cancer Services, Box 131, M.D. Anderson Hospital & Tumor Institute, 6723 Bertner Ave., Houston 77030, phone 713-792-2222.

Cancer Education Review Committee—Sept. 13, Linden Hill Hotel, Bethesda, Md. Open 8:30-10 a.m.

Cancer Research Manpower Review Committee—Sept. 13-14, NIH Bldg 31 Rm 2, open Sept. 13 8:30-9 a.m.

Nutrition and Disease: Cancer--Sept. 14-15, Hyatt Islandia Hotel, San Diego. Contact Nomi Feldman, Conference Coordinator, 3770 Tansy, San Diego 92121, phone 619-453-6222.

American Institute of Ultrasound in Medicine--Sept. 16-19, Kansas City. 29th annual meeting. Contact AIUM, 4405 East-West Highway, Suite 504, Bethesda, Md. 20814, phone 301-656-6117.

Psychiatric Service Postgraduate Course--Sept. 17-21, Memorial Sloan-Kettering Cancer Center. Contact Charlene Landis, Dept. of Continuing Education, MSKCC, 1275 York Ave., New York 10021, phone 212-794-6754.

The Role of Cyclic Nucleic Acid Adducts in Carcinogenesis and Mutagenesis—Sept. 17-19, Lyon. International workshop. Contact Dr. B. Singer, 135 Melvin Calvin Hall, Univ. of California, Berkeley 94720, or Dr. H. Bartsch, IARC, 150 Cours Albert Thomas, F-69372 Lyon Cedex 08, France.

2nd International Workshop on Human Leukocyte Differentiation Antigens--Sept. 17-20, Boston. Contact Dr. John Finerty, Immunology & Immunochemistry Branch, NIAID, NIH, Westwood Bldg Rm 752, Bethesda 20205, phone 301-496-5598.

Tutorial on Neoplastic Hematopathology—Sept. 17-21, Pasadena, Calif. Contact Claude Weil, Tutorial Coordinator, International House, Univ. of Chicago, 1414 E. 59th St., Chicago 60637, phone 312-753-2277.

Adriamycin: A Decade of Experience--Sept. 22, McCormick Center Hotel, Chicago. Contact Jacqueline Samuel, Univ. of Chicago Cancer Research Center, Box 444, Chicago 60637.

Application of Molecular Biology to the Nervous System—Sept. 23-25, Oxford. EMBO international workshop. Contact Prof. E.A. Barnard, Dept. of Biochemistry, Imperial College, London SW7 2AZ, U.K.

National Cancer Advisory Board--Sept. 24-26, NIH Bldg 1 Wilson Hall, 8:30 a.m. each day. Closed Sept. 25.

First International Symposium on Epstein-Barr Virus & Associated Malignant Diseases--Sept. 24-28, Loutrake, Greece. Contact Dr. Gary Pearson, Mayo Clinic, Rochester, Minn. 55905, or Dr. Paul Levine, NCI, Landow Bldg Rm 5A21, Bethesda 20205.

Rehabilitation and Continuing Care in Cancer—Sept. 27-28, Doubletree Hotel, Overland Park, Kan. Contact Jan Johnston, Office of Continuing Education, Univ. of Kansas Medical Center, 39th & Rainbow Blvd, Kansas City, Kan. 66103, phone 913-588-4480.

Assn. of Community Cancer Centers--Sept. 28-29, Portland, Ore. Regional meeting. Contact Comprehensive Cancer Program, Good Samaritan Hospital & Medical Center, 1015 NW 22nd Ave., Portland 97210, phone 503-229-7283.

FUTURE MEETINGS

Symposium on Methodology and Quality Assurance in Cancer Clinical Trials--Oct. 24-26, Washington D.C. Sponsored by the Biometrics Research Branch of NCI's Cancer Therapy Evaluation Program. Contact Mark Brown, Social & Scientific Systems Inc., 7101 Wisconsin Ave. Suite 610, Bethesda 20814.

Leukemia Society Annual Symposium—Nov. 2, Alameda Plaza Hotel, Wornell at Ward Parkway, Kansas City, Mo. Contact Jan Johnston, Office of Continuing Education, Univ. of Kansas Medical Center, 39th & Rainbow Blvd., Kansas City, Kan. 66103, phone 913-588-4480.

Lung Cancer 1984—Nov. 7-9, Shamrock Hilton Hotel, Houston. 27th annual Clinical Conference. Contact Office of Conference Services, Box 131, M.D. Anderson Hospital & Tumor Institute, 6723 Bertner Ave., Houston 77030, phone 713-792-2222.

Leukemia Society of America Regional Medical Symposium—Nov. 8-10, Hyatt Regency, New Orleans. Treatment advances, research gains, psychosocial problems. Contact the Society, 800 Second Ave., New York 10017.

Practical Approaches to Oncology--Nov. 9, Holiday Inn, Fargo, N.D. Lectures on new trends in management of cancer patients. Contact Medical Education, St. Luke's Hospital, 5th St. N. at Mills Ave., Fargo 58122, phone 701-280-5933.

1984 Urologic Tumor Symposium—Nov. 15-17, Memorial Sloan-Kettering Cancer Center. Contact CME Conference Planning Office, C-180, MSKCC, 1275 York Ave., New York 10021, phone 212-794-6754.

Consensus Development Conference on Limb Sparing Treatment of Adult Soft Tissue and Osteogenic Sarcomas—Dec. 3-5, NIH. Contact Michael Bernstein, Office of Medical Applications of Research, NIH Bldg 1 Rm 216, Bethesda 20205, 301-496-1143.

Clinical Cytopathology for Pathologists--March, 1985 to May for Home Study Course A; May 6-17, In Residence Course B at Johns Hopkins Medical Institutions, Baltimore. Intensive refresher for pathologists certified by the American Board of Pathology or its international equivalent. Application and preregistration advised before Nov. 30, 1984. Contact John Frost, M.D., 604 Pathology Bldg, Johns Hopkins Hospital, Baltimore 21205.

The Cancer Letter _Editor Jerry D. Boyd

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