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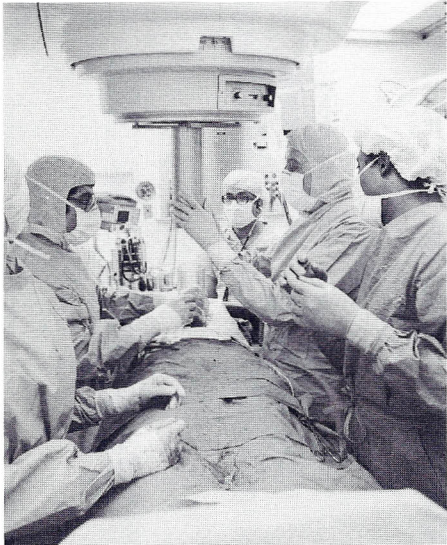
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THE

# CANCER

SCOURGE



**Cancer patient** being treated with the aid of Varian Clinac 18 linear accelerator.

## Howard's Role in Cancer Research and Treatment

By Harriet Jackson Scarupa

**Scene I:** Figures in wrinkled green scrub suits hover above the body of the patient: a 55-year-old laborer, the yellow cast of his skin indicating jaundice. Exploratory surgery has already revealed the cause of the jaundice: a large tumor located at the head of the pancreas. Quickly, a biopsy is performed. The test confirms the worst: the tumor is cancerous and the malignancy has already spread into surrounding tissues. The medical team, those hovering figures in green, then makes a crucial decision: to treat the patient with intraoperative radiation therapy, a unique procedure which directs high doses of radiation to malignant tissues at the time of operation.

A huge super-voltage X-ray machine, looking like a prop from a science fiction movie, looms above the patient. This is the Varian Clinac 18 linear accelerator, capable of delivering an electron beam to a precisely adjustable depth in the patient's body.

One of the green-suited figures, the radiotherapist, steps forward. He takes a lucite cone, open at both ends, inserts it into the open wound and connects it to the linear accelerator with a short metal tube. An anesthesiologist checks the patient's vital signs once again before the entire medical team—surgeon, anesthesiologist, radiotherapist, technologists, nurses, orderlies—exits the room. For six minutes they keep watch over the patient via closed-circuit television and strategically-placed mirrors as they let the machine do its work: delivering 2,000-3,000 rads of electrons to the cancerous pancreas and its nearby cancerous tissues.

The team returns. The surgeon stitches up the patient's abdomen in layers. Orderlies then wheel the patient into the recovery room.

Prognosis: too early to tell. But, as the recipient of the unique intraoperative radiation therapy, the patient has already reaped several important benefits. His malignancy

has been attacked with a larger amount of cancer-destroying radiation at one time than could ever have been possible with more conventional radiation procedures. And because his body was already open for surgery, the radiotherapist was able to push aside healthy organs and tissues, sparing them from the deadly effects of the radiation. Thus, the patient was saved from debilitating side effects of more conventional radiation procedures.

**Scene II:** A researcher in the traditional white lab coat sits before her workbench performing a series of tests on tissue and blood samples taken from patients suffering from cancer of the colon and rectum. She is looking for the presence of sensitized lymphocytes (infection-fighting cells). These would indicate that the body is able to recognize that the cancerous colorectal cells are foreign invaders. As she works, the researcher engages in a perpetual internal dialogue: "Is it true?" she asks. "Does the body, in fact, recognize cancer cells as foreign? If so, why hasn't the immune system—the body's natural defense force against disease—been able to protect it from these unwanted invaders? Experiments have shown that animals can reject certain cancerous tumors if the immune system recognizes them as foreign. So, shouldn't we be able to find a way to manipulate the human immune system to do the same?"

The answers to her questions aren't in yet. They're not likely to be in tomorrow or the day after. But somewhere in the answers, she fervently believes, lies the possibility of developing a dynamic weapon for cancer control, one utilizing the body's own natural system of defense against disease.

**Scene III:** A fenced-in, barbed-wire-topped juvenile detention center in Laurel, Md., for those who have been convicted of a variety of offenses. To look tough, to act tough, to speak tough have all been a part of the super-macho posture these youth have adopted to "make it" out on the streets. Part of that image, not surprisingly, includes smoking cigarettes. Not only are cigarettes a macho symbol, but a means

of exchange — and a symbol of power. Those inmates boasting the greatest number of cigarette cartons in their possession are invariably afforded the most respect.

It is at this seemingly unlikely population in this seemingly unlikely place that a pilot health education project is directed, one whose aim is to impress upon these "tough" young men the importance of adopting good health practices as a way to help ward off cancer. At the first session, a popular radio personality speaks to the youth about the importance of "believing in yourself." If you believe in yourself, he adds, you have to be conscious of your health. The next sessions will get down to specifics. Among them: pointing out the relationship between cigarette smoking and the development of lung cancer. The hope: that the youthful inmates will be persuaded to give up smoking.

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## I

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What ties these three disparate scenes together is Howard University.

The radiotherapist in the first scene is Dr. Alfred Goldson, chairman of the Department of radiotherapy at the College of Medicine.

The researcher in the second scene is Dr. Georgia Dunston, associate professor of microbiology at the College of Medicine, her research project is one of the many overseen by the Howard University Cancer Center.

The health education project at the Oak Hill Juvenile Institution, depicted in the third scene, was developed by the Cancer Center's community outreach branch.

Clearly, it is appropriate for any university to involve itself in studying, treating and educating the public about cancer, that modern-day medical scourge. For cancer is the second most frequent cause of death in the U.S. today (after heart disease) and if present rates continue, it will strike one out of four Americans. Already, it is responsible for one of six deaths in the U.S. and, while predominantly an affliction of middle and old age, it kills more children under 15 than other disease.

It is especially appropriate, though, that Howard University, the nation's largest predominantly-Black university, involve itself in meeting the challenge to combat cancer. For cancer has proven to be a special scourge on the Black community. As Vernon E. Jordan, Jr., president of the National Urban League, remarked at a February 1979 conference on cancer and Black Americans: "Cancer, like unemployment, bad housing and decaying cities is something that must concern everybody. But cancer, like those economic and social issues, has a disproportionate impact on the Black population, and thus the fight against cancer must encompass special efforts to combat cancer among Black people."

By any index, this "disproportionate impact" is shockingly apparent. Consider these figures compiled by the American Cancer Society:

■ In the last 25 years, there has been an 8 percent increase in the incidence of cancer in Black Americans, compared to a 3 percent decrease in the incidence of cancer in whites.

■ During that same period, there was a 26 percent increase in cancer death rates in Black Americans, compared to a 6 percent increase in whites.

■ The cancer death rate for Black women (120 per 100,000) is slightly higher today than it was 40 years ago.

■ The cancer death rate for Black men (200 per 100,000) is almost three times what it was 40 years ago.

■ Overall, the cancer death rate for Black Americans of both sexes is higher today than for their white counterparts and has been so since 1950.

■ Cancer incidence rates for Black Americans are higher than those for white Americans in the following sites: esophagus, pancreas, stomach, uterine cervix, prostate and lung and bronchus.

■ The five-year-survival rate for Black Americans is lower for most sites of cancer than for white Americans.

As if these national figures were not dismal enough, the figures for Black Washington, D.C. area residents are more dismal still. When the Cancer Coordinating Coun-

cil for Metropolitan Washington examined statistics from 10 major U.S. metropolitan areas (which together comprise over one-third of the U.S. Black population), it found that Blacks in the D.C. metropolitan area have the highest age-adjusted cancer mortality rates of all 10 areas, with nearby Baltimore ranking second.

What all these figures, whether local or national, signify is simple: Cancer is striking — and killing — Black Americans at the highest rate in U.S. medical history.

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## II

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Howard's work in cancer treatment, research and education dates back to 1949 when Dr. Jack E. White, currently director of the Howard University Cancer Center, began special training in cancer surgery at the Memorial Sloan-Kettering Cancer Center in New York City, considered a leader, if not *the* leader, in cancer work in this country.

The man who steered him into cancer work, the man who also was his mentor and inspiration, was Dr. Charles R. Drew, the pioneering surgeon, researcher and developer of the modern blood bank, who was then chairman of Howard's department of surgery. Dr. White, who received his M.D. from Howard in 1944, was a chief resident in surgery at old Freedmen's Hospital when Dr. Drew called him into his office one day. "He said, 'How'd you like to go to Sloan-Kettering to be trained in clinical cancer?'" recalls Dr. White. "I said I'd think about it. I just knew I wouldn't like it [cancer work] at all. But I decided to give it a try." He learned, of course, he did like cancer work. "I've found in cancer some challenges I don't think I would have found anywhere else," he says simply. At Sloan-Kettering he discovered he was the first Black surgeon to be trained in clinical cancer and he vowed, he says, "that I wouldn't be the last."

Utilizing the specialized training he received at Sloan-Kettering, intellectually stimulated by the challenge of cancer and imbued with a strong streak of social concern (which he attributes to the influence of

**We [at Howard] have been the only group of people focusing in clearly and sharply—on both the local and national level—on the problem of cancer in Black Americans.**

6 Dr. Drew), Dr. White returned to Howard in 1951 to launch the university on its first efforts to deal with the cancer menace. A program in cancer surgery came first, followed by programs in radiology, research, epidemiology. . . . In 1972, the Cancer Center was formally established under Dr. White's leadership to serve as the umbrella organization for the university's expanding cancer-related activities. A year later, the National Cancer Institute (NCI), the federal government's principal agency for cancer research, awarded the university a grant of \$5,079,034 (augmented by a supplemental award of \$749,477) to finance the construction of a building to house the center. (The NCI has designated Howard's Cancer Center — together with Georgetown University's Vincent T. Lombardi Cancer Research Center—one of the nation's 23 comprehensive cancer centers.)

That building is now a reality, with formal dedication ceremonies set for April 24. The six-story, 35,000-net-square-foot structure, which is located adjacent to the hospital and across from the College of Medicine, boasts a dazzling array of up-to-the-minute equipment and facilities. But it is also a symbol. A symbol of the importance of Howard's cancer-related work in the past. A symbol of the enhanced contributions it hopes to make in the future.

### III

"We [at Howard] have been the only group of people focusing in clearly and sharply — on both the local and national level — on the problem of cancer in Black Americans," says Dr. White, with more than a hint of pride in his voice. "We began looking into these [cancer] rates back in the fifties. The story was all there in the statistics but no one was pulling them out and looking at what they meant. Nobody had the interest to do it." But through community programs, newspaper, radio and television interviews, Congressional hearings, whatever, he and others in the Howard medical community set out to share these statistics and their implications.

National recognition of the high rate of cancer among Black Americans was given a further boost last year when Dr. LaSalle D. Leffall, Jr., chairman of the Department of Surgery at the College of Medicine, was elected national president of the American Cancer Society (ACS), the nation's largest private organization devoted to cancer research, education and service. As the first Black American to hold the one-year post, he was able to capitalize on his high visibility to dramatize the spiraling cancer rates in Black communities. Under his leadership, for example, the organization convened the first national conference "On Meeting the Challenge of Cancer Among Black Americans." Today, as chairman of the ACS's committee on cancer and minorities, he is trying to insure, he says, that the organization "maintain its vigor" in addressing the issue.

But why these high rates? The theories are abundant, the hard evidence sparse. Comments Dr. Leffall: "I don't believe it [the high rate] is related to race *per se* but to environmental factors — cigarette smoking, alcoholism, poor nutrition, workplace environment. Black Americans, for instance, are more likely to work in the dirtiest jobs where they're more likely to be exposed to asbestos and other toxic substances."

Dr. White, also, points out that the rise in cancer among Black Americans coincided with that "great urban push" out of the rural areas of the South into the industrialized centers of the North. With this migration came not only greater exposure to industrial pollutants but also a change in lifestyle, one more likely to bring about stress. "Stress, itself, may play a role in cancer," he says. "We don't know."

At a Congressional subcommittee hearing last year, Sen. Edward M. Kennedy asked Dr. White to try to explain the discrepancy in cancer rates between white and Black men. Dr. White cited Black males' greater exposure to potentially carcinogenic (cancer-causing) substances and then added a pointed footnote: "Color has imposed an extra burden on Black

males that the white male does not have to contend with."

Other possible reasons advanced for high cancer rates among Black Americans relate to their overall health conditions. The crucial components of good health care — what Dr. Leffall cites as "the motivation of the patient, the availability of medical care and the accessibility of medical care" — are often missing from the landscape of Black America. So many Black families are so exclusively caught up in the day-to-day struggle of trying to make ends meet that they place health care far far down on their list of priorities. What's more, poor communities, nationwide, suffer a severe doctor shortage. This means that by the time many poor people (who are disproportionately Black) finally drag themselves to a doctor, they're already in an advanced stage of disease. With cancer this has particularly disastrous consequences. The earlier cancer is detected and treated, the greater the chances for cure. But even when cancer *is* detected in time, Black cancer patients have been found to have a lower rate of survival than whites. This is because, as Dr. White points out, "they are more likely to have associated diseases — obesity, hypertension, neglected or poorly treated diabetes, nutritional deficiencies — which serve to impair cancer treatment."

Ultimately, then, improving the cancer statistics of Black Americans is intimately tied to improving the general health conditions of Black Americans. And improving the general health conditions of Black Americans is intimately tied to improving the socio-economic conditions of Black Americans.

Similarly, Howard's work in the cancer field should not be viewed in isolation. The mission of the university, as expressed in a 1977 Board of Trustees statement, for instance, is not only to provide quality education for its students but also "to assist, through utilization of its resources, in the development of and assistance in the solutions to human and social problems, particularly those of the under-served poor, and Black communities."

It is before this backdrop that we now

**About 40 patients have been treated with intraoperative radiation therapy since the \$1 million suite was installed in the hospital in 1976.**

look more closely at the university's work in cancer treatment, training, research and education.

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IV

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Howard has been the nation's pioneer in utilizing intraoperative radiation therapy in cancer treatment. "Our intraoperative radiation therapy suite is the only facility of its kind in the world," notes Dr. Goldson. "Even the Japanese — who were the first to use intraoperative radiation therapy back in 1964 — don't have the combination of a radiotherapy and surgical suite that we have."

About 40 patients have been treated with intraoperative radiation therapy since the \$1 million suite was installed in the hospital in 1976. "The technique is still experimental," acknowledges Dr. Goldson. "We haven't tried it on enough patients and done enough detailed studies — with controls — to make any definitive statement on how it really fares as a treatment. But we have a lot of confidence in it because it makes sense. One of the shortcomings of conventional radiation therapy is that it damages normal tissues as well as cancerous ones. With intraoperative radiation therapy, this problem is minimized. Another encouraging sign is that the high doses of radiation administered to patients in this technique have been well-tolerated. In cases where autopsies have been performed, it's been shown it was not the treatment that killed the patient but other factors."

Not surprisingly, the work at Howard in intraoperative radiation therapy has been the object of considerable national and international interest. In March 1979, for instance, Mrs. Jihan Sadat, wife of President Anwar Sadat of Egypt, made a special visit to view the intraoperative radiation therapy suite.

Reflecting the importance of the university's role in radiation therapy, in general, is the fact that it runs the only approved residency training program for radiation therapy in Washington. In addition, the College of Allied Health was the first in the

nation to offer a B.S. degree in radiation therapy technology. The program, which trains radiation therapy technologists (in contrast to the residency training program which trains doctors), has been a model for other schools seeking to set up similar ventures, notes Mattie Tabron, chairman of the department.

Beyond the national boundary, the radiotherapy department at Howard has been instrumental in setting up radiation facilities to treat cancer in Haiti, Liberia — and more recently, Tanzania, where facilities at the Muhimbili Medical Centre in Dar-es-Salaam have been staffed by rotating residents from the Department of Radiotherapy. Dr. Ulrich K. Henschke, former chairman of the department and a pioneer in the whole radiotherapy field, is currently working there.

Radiation — at Howard and elsewhere — is just one of three major methods used to treat cancer. The other two are surgery and chemotherapy, which utilizes drugs to either kill cancer cells, prevent them from spreading or alleviate symptoms of the disease.

"The trend in treatment now," explains Dr. White, "is to use combined or multiple methods of treatment. This means that in certain types of cancer the surgeon, the chemotherapist and the radiotherapist all play a role in care of the patient." Adds Dr. Leffall, this time wearing his Howard cap instead of his American Cancer Society cap, "What we have at Howard is an effective multidisciplinary team to help take care of a person with cancer. It's not a one person show."

Howard's Cancer Center oversees a special 20-bed unit on the fourth floor of the University Hospital. The patients assigned to this ward have special needs, explains Dr. Carrie Hunter, director of clinical services for the center. Some, for instance, must be isolated because their cancer or treatment has left them with greatly lessened immunity, making them more vulnerable to other diseases. Others are isolated because they themselves are dangerous to others; they have radioactive materials actually inserted into their can-

cerous growths for a short time as part of their treatment. Still others may need platelets or white blood cells or have other special requirements either as a result of the disease or treatment for it.

This unit, too, has been the first in the hospital to adopt "primary care nursing," points out Dr. Hunter. This means that each nurse is personally responsible for a set number of patients (in this case, three) instead of for a general patient population.

In addition to the cancer patients treated in the special oncology cancer unit, on any given day, 75 other patients may be there either because they have cancer or are suspected of having it, explains Dr. White. Meanwhile, the center's outpatient clinic provides follow-up treatment to still others, while its screening and detection clinic — the only one in the city — utilizes a variety of sophisticated procedures to try to find incipient cancers in individuals who are in the cancer-prone population (i.e. over age 40). In 1979, for instance, the Cancer Center saw 525 new patients, maintained 3,500 to 4,000 in its follow-up system and provided screening and diagnostic services for 125.

That isn't the whole story of Howard's role in cancer treatment, though. The hospital's physical rehabilitation department provides a host of other services for cancer patients — helping a woman who has had a mastectomy to regain the use of her arm muscles, for instance, or a man whose larynx has been removed to learn to talk with "the esophageal voice." The hospital also provides services to help cancer patients and their families cope with many of the practical and psychological problems attendant the disease.

Jackie Tillman is the social worker assigned to the hospital's oncology unit. Her job is to provide counseling to patients and their families and to help them hook up with the resources they need to cope with the disease — whether it's disability insurance or a babysitter. "Where the patient needs me most is where I try to be," she says.

"Initially, many patients have a 'why me?' attitude when they learn they have cancer," she observes. "Some may deny it even

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8 after the doctor has told them they have cancer and the extent of its spread. For some people, getting cancer is an attack on the ego as well as on the health. Oftentimes, they'll say something like 'If I could just get my strength back then I could do this or do that' when the reality may be that they're not going to get their strength back."

Tillman does not force patients to confront the seriousness of the disease and what it may mean, she says. Instead she tries to help them "verbalize their feelings when they are ready." She also helps families verbalize their feelings. "Often a family gets overinvolved with the patient," she's found. "Family members sometimes feel guilty, as if they've done something that has given the patient the disease. Or they get overanxious. They want to give, give, give, whereas the patient doesn't want that. It makes him feel smothered."

Overall, she's found that how a patient deals with cancer depends a lot on "where the patient was before the diagnosis." "The person who is sure of himself, self-sufficient, has a good employment history and a strong family situation is better able to handle the disease," she says.

Her remarks seem a natural introduction to looking at the stories of two former patients:

Agnes Gross is 72 and was operated on in 1951 for cancer of the cervix. (Dr. White was her surgeon.) She's had five other operations for various things, unrelated to the cancer, she says, since that time. While she may seem a medical miracle, she attributes her survival to four main factors: 1) the fact that her cancer was detected and treated early, 2) the excellence of the medical care she received at Freedmen's Hospital (predecessor to Howard University Hospital), 3) her own mental attitude, 4) the support of her family.

The College Park, Md., resident tells her story: "I had been working as a manager of an elementary school cafeteria and I felt tired all the time. Tired in the morning, tired at night, just tired. Also, I had some spotting between my periods. One night I had a

dream about cancer. I told my son about the dream and he told me how they'd been talking about cancer in school and how his teacher said it was important to get to a doctor right away if you have any of the signs of cancer. [see box] So I promised my son I would go to the doctor right after Easter. And I did."

She went to the tumor clinic at Freedmen's. A tumor was detected. A biopsy revealed that the tumor was malignant. Following surgery, she had 40 days of radiation therapy. "Sometimes I would cry thinking about the cancer but being a Christian, having faith in God, was a good help to me. Whenever I'd get depressed, I'd keep involved. And I have a wonderful family — lovely husband, lovely son, lovely sister — always there to encourage me. I've had so many friends with cancer and seems they'd just give up. They'd stop being interested in anything. But I always kept busy and I always followed doctor's orders."

Welford Allen (a pseudonym) is 62, a retired Washington D.C. postal clerk who was also a patient of Dr. White's. His story: "I just didn't feel well, was pooped out all the time. I had a slight backache but didn't hurt or nothin' like that." For two years, he said, his personal physician treated him with painkillers and tranquilizers. Finally, the physician decided Allen should have a series of tests. When the x-rays came back, they showed a large tumor in the stomach. His doctor sent them to Dr. White who immediately had Allen admitted to the hospital. That was in December 1977. Surgery for what proved to be a malignant tumor and a 16-month regimen of chemotherapy (which Allen found "debilitating") followed.

Allen's initial reaction to the diagnosis was shock: "I wondered why I hadn't had pain before. Sometimes I felt a little nauseated, but never in pain. I'd always heard cancer involved a lot of pain so I just never gave cancer a thought."

His second reaction was anger: "If my doctor had suggested the tests earlier maybe the cancer wouldn't have spread as far as it did. They had to take out three-fourths of my stomach. For two or three years that doctor was giving me painkillers

and tranquilizers. That wasn't solving the problem!"

There has been no recurrence of the disease in Allen's case. "When I heard 'cancer' I thought it was the end. Well, here I am. Some days I feel very good. Other days I don't feel up to par. I've learned to stop worrying about it [cancer]. If that's the way I have to go, that's the way I have to go. You have to go someday anyway."

In a sense, Weldon Allen and Agnes Gross represent success stories: they are alive to talk about their experiences. More often, the patient succumbs to the disease.

Isn't it depressing, then, for those who work with cancer patients day after day knowing that their efforts may well be in vain. The answers—at least for many in the Howard medical community—seem to be both "yes" and "no."

Dr. Carrie Hunter: "I don't deny that working in the cancer area is depressing. Sometimes there just is no hope. So you have to develop your own defense mechanisms to deal with the good and bad of your work. And you have to look at the broad picture. Overall, oncology is such a challenging area."

Jackie Tillman: "No, I don't feel working with cancer patients is depressing. I look at them as people with a chronic disease and if I can help them survive whatever days are left then I feel I've accomplished something. And I think they appreciate it. One patient even prepared me for her death. One day she told me she did not want me to be upset if I came in to see her and she was not there. I think it was her way of thanking me for some of the things I had done for her. Next week, she was dead."

Dr. Alfred Goldson: "A lot of times even those in the [medical] profession look at cancer patients as doomed. They just sort of give up on them. But if I can see foul-smelling ulcers cleared up, if I can see pain relieved, I feel I'm doing something worthwhile. Then, too, being with cancer patients helps you appreciate life. I've seen people change when they get a diagnosis of cancer. They develop inner strength and learn to live what life they have to the fullest."

## Cancer training at Howard isn't confined to doctors—and future doctors.

These attitudes can't help but affect you."

Zeno Charles-Marcel, a senior at the College of Medicine and president of Howard's chapter of the St. George Society, a national organization of medical students who are especially interested in cancer: "Working in cancer might seem depressing today but in the future—through the efforts of research—there is hope. There is hope even today if cancer is detected and treated early." He sees evidence of that hope in his own experience. "My mother had cancer and is still alive and well because it was detected at an early enough stage," he says. It was his mother's experience, in fact, that fostered his own interest in treating cancer patients.

### V

That Marcel, a native of Trinidad, is a *student* points out an often taken-for-granted side of cancer work at the university: Oncology plays an integral and important part in the College of Medicine's curriculum and, because the University Hospital is a teaching facility, medical students get first-hand experience in treating cancer patients. Additional training in cancer comes to them through programs of the St. George Society, through special lectures, seminars and internships at the center, through opportunities for post-doctoral work in medical and surgical cancer, cancer research and the like. The aim of all this is to prepare doctors who, if not cancer specialists themselves, will be knowledgeable enough to be able to prevent the kind of misdiagnosis that befell a Weldon Allen. Even doctors who are long out of medical school can still hook into the Cancer Center's training network by enrolling in special seminars or turning to cancer specialists at Howard for consultation.

Cancer training at Howard isn't confined to doctors—and future doctors—though. Future radiation therapy technologists enrolled in the College of Allied Health, future nurses enrolled in the College of Nursing, future dentists enrolled in the College of Dentistry all receive basic information on

cancer and its treatment methods as part of their education.

The College of Pharmacy and Pharmaceutical Sciences includes a section on anti-cancer drugs in its required course in biomedical chemistry, and graduate students from the School of Social Work can do field work in the hospital's oncology unit. Graduate students in the university's various scientific disciplines also can elect to pursue cancer-related research.

From whichever disciplines they come, those involved in cancer work seem to share a similar dedication of purpose. And they are often asked whether there will ever be a "cure" for the disease.

Dr. White, with 30 years of cancer-related work behind him, takes the long view: "We will find a cure but we will do it slowly and one cancer at a time. There are maybe 100 different kinds of human cancers and we won't find a cure that goes across the board. Finding a cure won't be a dramatic overnight thing but a slow process. And I think it's going to require good cell biology—looking into cells, how they behave, how one cell differs from another, how to bring about changes in cells. I'm talking about basic research. Good solid basic research."

Most of the research projects at Howard that fall under the aegis of the Cancer Center deal with cellular and molecular biology, explains Dr. Kenneth Olden, the center's associate director for research who is on leave from his job as research biologist at the National Institutes of Health (NIH). "We're looking at what cells do and what the molecules of cells do, not at what the body as a whole does," he explains. Within this general field fall several subdisciplines, among them, immunology, cell membranes and membrane receptors and carcinogenesis (testing various substances to see if they are capable of causing cancer in cells).

But why the emphasis on something as esoteric-sounding as cellular and molecular biology? Underlying such research is the following rationale: if one understands how normal cells and their ingredients work and if one understands how abnormal

(cancerous) cells and their ingredients work one should be able to find ways to change abnormal cells back into normal cells or to prevent normal cells from becoming abnormal in the first place. If this sounds complicated, it is. Consider, then, three sample projects currently underway.

■ Dr. Olden, first at NIH and now at the Cancer Center, has been studying fibronectin, a protein found on the surface of cells. "When cells become malignant, fibronectin disappears," he explains. "We've been able to isolate fibronectin and we've found that when you add it to malignant cells it can make these cells behave in almost all ways like normal cells. They look normal. But introducing fibronectin still can't restore the normal growth patterns of cells or the way they take in nutrients."

Much more time needs to be spent in the laboratory before it can be determined if fibronectin can cause abnormal cells to exhibit *all* the properties of normal cells. But a start has been made, an important start that may give doctors another important chemotherapeutic tool in cancer treatment.

■ Dr. Govind J. Kapadia, professor of biomedical chemistry in the College of Pharmacy and Pharmaceutical Sciences, and a senior investigator with the Cancer Center, has been studying the carcinogenic properties of herbal remedies (folk medicines.) "People think all herbal medicine is good," he observes. "Well, some herbal medicines can be good. Others can be harmful or some can be good for one thing and bad for another. Several of the plant products we've tested—sassafras tea, for instance—were found to cause cancer when injected in rats." His next step: trying to identify exactly what substance in these products causes the cancer. But he's also looking at the other side of the picture: trying to identify substances in herbal medicines that can be useful for treating cancer and other diseases.

■ Dr. Sisir Dutta, professor of botany in the College of Liberal Arts and Sciences, and a Cancer Center researcher, is involved in a study of the effects of microwave and non-ionizing radiation on cells. His project re-



10 flects the growing public concern in recent years about the invisible but potentially-carcinogenic pollution given off by power lines, radio transmitters, television sets, microwave ovens and the like. (One University of Colorado medical researcher has found, for instance, that the death rate for leukemia and certain other cancers is higher than average in homes within 130 feet of high-current power lines.) Dr. Dutta has been exposing microorganisms (certain strains of yeast and bacteria) to microwave radiation to see what happens to them. He has found that the radiation does not seem to change these organisms' genes but that it does seem to "decrease the viability" of their cells. He now plans to study the effect of microwaves on human brain cells — not only to see if the radiation makes them more susceptible to cancer but also to see if it has any neurological effect on the brain. If microwaves do affect human brain cells — and preliminary evidence suggests it does — that means they can also affect behavior. And that, points out Dr. Dutta, has profound implications.

Nowhere in the scientific papers describing the work of Dr. Dutta, Dr. Olden, Dr. Kapadia or Dr. Dunston will one find the adjective "Black." "Basic research, by definition is color blind," observes Dr. Olden. "Our findings will help people of all races."

But there are some people who claim that effort and money spent on cancer research is a waste. Instead they say, the emphasis should be put on eliminating all the things we know play a role in cancer. Their rallying cry is "prevention."

Dr. White is one who believes an exclusive focus on "prevention" would be equally short-sighted — both for practical and philosophical reasons. "It's simply that the makeup and conditions of our society make total prevention almost an impossibility," he argues. "There is no way you can avoid everything that might cause cancer and still function as a productive member of our society. Besides, research should be supported under any circumstances. It fulfills a basic human need to discover new knowledge. I am not denying all efforts at prevention are worthy. They



Cancer Center

are. But we shouldn't neglect the laboratory."

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## VI

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The function of the Cancer Center's community outreach branch is to help ordinary people understand the nature of cancer and take steps that may help prevent the disease, steps like stopping smoking, reducing the fat content and adding fiber to one's diet, and seeing the doctor and dentist at regular intervals. A National Cancer Institute pamphlet points out, for instance, that "about half of all cancers start in parts of the body that a doctor can routinely examine during an office visit." Such procedures as the Pap test (for uterine cancer) and the procto (for colorectal cancer) are highly effective cancer-detection tools.

As far as smoking is concerned, medical research again and again has identified cigarette smoking as a major cause of lung cancer (a reality even the cigarette industry must now acknowledge with that required label: "Warning: The Surgeon General Has Determined that Cigarette Smoking is Dangerous to Your Health."). The American Cancer Society points out that lung cancer death rates are 10 times as high among regular cigarette smokers as among those who never smoke and that for heavy smokers—two or more packs a day—the death rate is 20 times as high.

The community outreach branch, which is funded by a grant from the National Cancer Institute, overlaps with the Cancer Coordinating Council for Metropolitan Washington. The latter, which is co-sponsored by Howard's Cancer Center and Georgetown University's Vincent T. Lombardi Cancer Research Center, pulls in these two institutions together with George Washington University, the D.C. Government's Department of Human Services and the Washington branch of the American Cancer Society in a united community-wide cancer-control effort. Its February 1979 report, "A Comparison of Nonwhite Cancer Mortality Among Major U.S. Metropolitan Areas: 1969-1971," dramatized

the especially high cancer death rates of Black metropolitan Washington area residents. A July 1979 report, "The Distribution of Cancer Mortality in Washington, D.C.: 1971-1976," identified the specific areas of the city with the highest cancer death rates. They were, the report documented, predominantly-Black and "among the poorest areas of the city."

Data from such studies is used by staff members of the community outreach branch to plan education programs. These include overseeing the pilot health education program at the Oak Hill Juvenile Institution, developing a cancer education curriculum for the public schools—a first in the nation, holding meetings in churches and community centers in high-cancer areas to explain how cancer develops, to encourage good health practices and to answer questions about the disease, creating TV and radio spot announcements and bus posters with a cancer-awareness message, distributing cancer-related literature at community health fairs, and maintaining a Cancer Information Service (CIS) to handle telephone inquiries about cancer.

The CIS, one of 27 in the nation funded by the National Cancer Institute, has received more than 10,000 calls since it was set up in 1975. "People call the service for all kinds of reasons," explains Godfrey Jacobs who heads the community outreach branch as well as serves as executive of the Cancer Coordinating Council for Metropolitan Washington. "Some are afraid to talk to their doctor or they don't understand something their doctor has told them. Others may have a relative who has cancer and they want to get additional information about the disease.

Pat Theiss, a health educator who handles the CIS line, cites some typical questions that come over the 636-5700 number: "I've found a lump in my breast. What are the chances it is cancerous?" "What's the National Cancer Institute's latest position of laetrile?" "Does cancer run in families?" "Is cancer contagious?" "Will drinking diet soda cause cancer? How about using a hair dryer?" Theiss draws on material provided by the National Cancer Institute, the

American Cancer Society, from Howard cancer specialists and others to provide basic answers to such questions.

"Our biggest challenge is to make people understand the nature and risks of the disease but not be so scared that they tune out the information," explains Jacobs. "We don't believe in frightening people [about cancer]. But we also don't believe in fooling people."

Follow-up studies have shown that the largest number of callers utilizing the CIS are white suburban women. Yet it is Black inner-city males who have the highest cancer incidence and death rates in the metropolitan area. At present, Jacobs and his co-workers are developing new programs targeted at this vulnerable group. "We feel we have to go beyond the traditional channels to reach this group," he says. The Oak Hill Juvenile Institution project represents such an attempt.

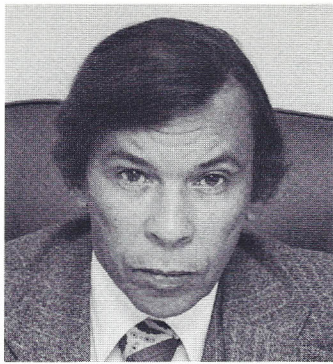
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## VII

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It was the statistics on how cancer is striking Black Washington, D.C. residents, especially those in poor neighborhoods, that helped give direction to the Cancer Center's community outreach efforts. The center's epidemiological and biostatistical branch "is the resource division for the rest of the center; it collects data, manages data and analyzes data," explains Dr. Zahur Alam, acting chief of epidemiology at the time this article was researched. Currently heading up the division is Dr. Roscoe Moore, who comes to the center from the National Institute of Occupational Safety and Health.

Howard University Hospital's tumor registry collects information on patients treated at the hospital, the type of cancer, the method of treatment, the patient's current status and related demographic data (e.g., age, sex). Such information allows biostatisticians to calculate survival rates for different types of treatment and provides other basic information crucial to cancer treatment, research, training and education.



Dr. Jack E. White

12 It was by collecting cancer data and analyzing it that Dr. White and others in the past were able to document the high cancer rates among Black Americans. This statistical analysis is ongoing. One especially intriguing project involves a comparative study of cancer of the prostate gland in the high-risk U.S. Black population and the low-risk Nigerian Black population. Projected epidemiological studies to be undertaken by the center involve gathering data on cancer incidence and death rates for those working in especially hazardous occupations and for those who have moved from the rural South to the urban North.

Most of Howard's work in epidemiology and biostatistics is at the "take off stage," Dr. Alam says. In the past, Howard simply lacked the resources, facilities and personnel to undertake large-scale statistical analysis. Before the Cancer Center moved into its new building, for instance, Dr. Alam shared a cramped office with two others in the College of Medicine and didn't even have sufficient space for his files. Today, the epidemiological and biostatistical branch has a wing of streamlined offices all in close proximity with the researchers, practitioners and health educators who utilize the data it collects. No wonder, Dr. Alam exults, "This building is more than a new building. It's a new life!"

Dr. Olden recently led a visitor on a tour of that building. He pointed out classrooms where advanced classes in oncology are held, laboratories and offices for the center's staff, treatment and diagnostic rooms for clinic patients, a full floor set aside for laboratory animals.

The new building enables the center to consolidate many of its projects which were previously scattered in various sections of the College of Medicine and Howard University Hospital, as well as within other departments of the university. But not all cancer-related activities will move to the building. Cancer patients requiring hospitalization, for instance, will still be treated at the hospital, and some researchers will remain in their established labs. While the new building holds 26 research labs, ini-

# WHAT IS CANCER?

Cancer is a word that stands for a group of diseases. It is characterized by abnormal and uncontrolled growth of cells, the tiny structures that make up all parts of the body. Normal cells grow for a purpose—to form the body or to replace worn or damaged tissues. Cancer cells seem to be runaway cells that multiply rapidly and without purpose. In most cases, these runaway cells build up into tumors. A *benign* tumor does not spread. But a *malignant* tumor—a cancerous tumor—invades and destroys neighboring tissues and organs and can spread to other parts of the body forming new growths called *metastases*. If untreated, cancer cells will overrun all the normal cells—causing death.

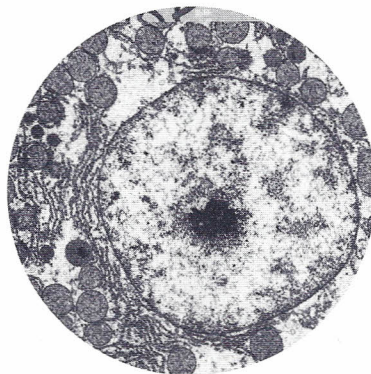
No one knows exactly why cancer starts. However, scientists have been able to identify certain factors

## Cancer's Seven Warning Signals

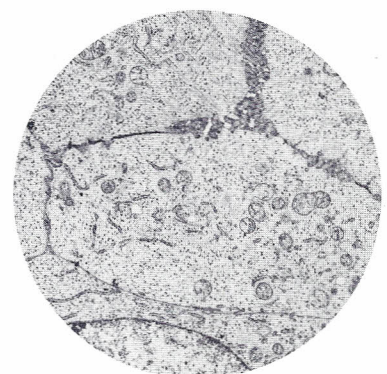
1. Change in bowel or bladder habits.
2. A sore that does not heal.
3. Unusual bleeding or discharge.
4. Thickening or lump in breast or elsewhere.
5. Indigestion or difficulty in swallowing.
6. Obvious change in wart or mole.
7. Nagging cough or hoarseness.

which make people more vulnerable to developing certain kinds of cancers: smoking cigarettes, overexposure to ultraviolet rays of the sun or excessive amounts of radiation, contact with certain chemicals.

(Based on information gathered from publications of the American Cancer Society and the National Cancer Institute.)



Normal cells



Cancerous cells

tially only 10-12 will be fully occupied.

"We plan to phase in new programs gradually," explains Dr. White. "Most of the money for research comes from grants — either from the National Cancer Institute or other sources — and as new grants are obtained by the investigators their programs will be worked in. If we planned the building in such a way that we would fill it up immediately the building would determine the program. The other way around, the program will determine what the building will become."

Today, the Cancer Center has a budget of almost \$1.8 million, according to Marc Britton, administrator for the center. Of this \$813,000 came from grants from the National Cancer Institute, another \$805,000 from the university and \$178,000 from other sources, among them the United Black Fund, Inc., and the D. C. chapter of Links, Inc. (These figures don't take into account funds that may have been secured independently.)

The center currently employs 62 people, with most of the investigators also holding faculty appointments in traditional academic departments. Dr. White, for instance, is not only director of the Cancer Center but also chairman of the College of Medicine's Department of Oncology, a graduate professor in the College of Liberal Arts and Sciences and assistant dean for research for the Graduate School.

Dr. Olden hopes to see the center establish a core of tenured senior researchers ("I'm talking about people with between 30-50 publications.") who will be free of the heavy teaching load so often carried by many cancer researchers at Howard in the past. He also envisions recruiting well-trained junior-level investigators to come on board as the needs of various research projects dictate. "That way," he believes, "we can have flexibility. We can change our researchers as our research needs change."

With the Cancer Center now a physical reality, Dr. Olden believes it will be far easier to attract the kind of scientists who are capable of making major advances in cancer research. It will also make it easier

to attract additional research money. But it can mean even more. It can show the skeptics that a predominantly-Black institution can be in the forefront of scientific research.

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## VIII

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Years ago, before there was a concerted national effort to address the cancer menace, Dr. White had a dream that one day Howard would have a Cancer Center. For him, then, the new building also represents a deep personal fulfillment. In the view of many in the Howard community, in fact, the Cancer Center could be called "the house that Jack built."

Working in the cancer field at Howard has not always been easy, he readily admits. "At times, it's been very discouraging in terms of lack of support — financial support, moral support. Some of the deans [of the College of Medicine] I've worked under were strictly traditionalists who seemed to regard me as a 'young upstart' and didn't really seem to understand the importance of what we were trying to do here."

But Dr. White never gave up the pursuit of his dream.

"I have had one capability that a lot of people are never able to acquire, I think, and that is an ability to focus," he confesses. Always, too, he kept before him the example of Dr. Charles R. Drew.

"I owe a great deal to Dr. Drew in terms of giving me some real sense of what is important in life and what is valuable in life. He was a man I found to be very very great in his modest way. He was not out there just for himself. He was out there for all of us. He went to bat for young Black doctors and surgeons everywhere and many of his ideas later became a part of the civil rights movement. It's unfortunate he died at such a young age [45] but there hasn't been one man who worked closely with him who has not made a substantial contribution in one way or another."

In a mellow mood now, Dr. White continues, "It's a funny thing. I've got a picture of Dr. Drew that I've had since 1948. It used to hang in my old office over at the hospital

and it seemed that every time I did something worthwhile I could see a smile on Dr. Drew's face and every time I did something that was kind of shabby that smile would turn into a frown."

That picture now hangs in the conference room of the Howard University Cancer Center. And Dr. White can rest assured. What the center symbolizes — the past, present and future contributions of Howard University in attacking the cancer scourge — would surely make Dr. Charles Drew smile. □