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THE MASS MEDIA, INTERPERSONAL CHANNELS, AND SELECTED GROUPS AS SOURCES OF INFORMATION ABOUT THE CANCER INFORMATION SERVICE'S TELEPHONE SYSTEM IN WASHINGTON, D.C., AND UTILIZATION OF THE SERVICE BY BLACKS AND WHITES: A COMPARATIVE COMMUNICATION STUDY

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# THE MASS MEDIA, INTERPERSONAL CHANNELS, AND SELECTED GROUPS AS SOURCES OF INFORMATION ABOUT THE CANCER INFORMATION SERVICE'S TELEPHONE SYSTEM IN WASHINGTON, D.C., AND UTILIZATION OF THE SERVICE BY BLACKS AND WHITES: A COMPARATIVE COMMUNICATION STUDY

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## ABSTRACT

THE MASS MEDIA, INTERPERSONAL CHANNELS, AND SELECTED GROUPS AS SOURCES OF INFORMATION ABOUT THE CANCER INFORMATION SERVICE'S TELEPHONE SYSTEM IN WASHINGTON, D.C., AND UTILIZATION OF THE SERVICE BY BLACKS AND WHITES: A COMPARATIVE COMMUNICATION STUDY

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This thesis describes an investigation of the utilization patterns of various demographic groups that first heard about the Cancer Information Service (CIS) through the mass media, interpersonal channels, and selected groups. More than one-third of the callers indicated they first heard about the CIS through television. Radio ranked second, attracting nearly 20 percent of the CIS callers. Blacks exhibited a greater tendency to first learn about the CIS through television than whites.

In addition, findings reveal the CIS in Washington, D.C. more than doubled the national average of all CIS offices in the percentage of calls received from blacks, which the National Cancer Institute (NCI) identified as a group at high risk to develop cancer. Without the availability of this analysis in 1985 to document the unparalleled

accomplishment of the CIS in Washington, D.C. to attract a high percentage of black callers, the NCI eliminated funding.

## ACKNOWLEDGMENTS

The credit begins with my parents, Richard Dykewicz, M.D., and Evelyn Dykewicz, R.N., who nurtured my interest in health care and taught me to find happiness from helping others. My brother Mark Dykewicz, M.D., provided me with a physician's perspective for this thesis and served as a role model in research studies, personifying excellence and leading through example. I need to recognize the contributions of my sister, Clare Dykewicz, M.D., for her patience, reassuring words of encouragement, suggestions, and other assistance, especially during the pressure-packed days of meeting thesis deadlines. In addition, my brother Philip Dykewicz, with degrees from one of the top business schools in the country, downplays his own impressive accomplishments, choosing instead to lead the cheers for me.

Medical faculty and other personnel associated with the Howard University Cancer Center and the Vincent T. Lombardi Cancer Center at Georgetown University deserve acknowledgment for their assistance with this project. The support of the communities at each university helped me feel I had been adopted as one of their own students.

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# CHAPTER I

# INTRODUCTION, REVIEW OF LITERATURE, AND RATIONALE FOR STUDY

## Introduction

Life-saving potential exists when the mass media disseminate health care information to the public. But differences have emerged between various demographic groups in the amount of benefit the groups gain from health care messages. As an example, individuals who typically learn about health information from the print media, such as newspapers, magazines, and books, tend to be well-informed in general.[1]

Not only does exposure to health care messages vary widely between demographic groups, but so does access to medical care. Income, age, and educational level of the consumer influence the utilization of health care.[2] Before information, knowledge, and recommendations can effectively

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[1]Les Butler, Gary King, and Jack E. White, M.D., "Communications Strategies, Cancer Information and Black Populations: An Analysis of Longitudinal Data" (Washington, D.C.: n.p., [1983]), p. 3.

[2]Robert A. Diseker, Robert Michielutte, and Virginia Morrison, "Use and Reported Effectiveness of Tel-Med: A Telephone Information System," American Journal of Public Health 70 (March 1980): 229.

reduce cancer morbidity and mortality, a health care delivery system must offer accessibility and responsiveness to all.[3] It is assumed that a telephone service could help to bridge the gap, encouraging consumers to enter the health care delivery system.

In the United States at the end of 1985, 117,051,000 telephone access lines stretched across the country, reaching more than 92 percent of all households. The total increased beyond the 114,349,000 access lines in place at the end of 1984, and the number of access lines could reach 121,383,000 at the end of 1986, according to projections from the United States Telephone Association.[4] Telephone access lines represent telephone service to an individual home or other location without counting each telephone extension separately.

With the wide accessibility and continued growth of the telephone service, the concept of supplying health information through Alexander Graham Bell's 1876 invention captured the interest of the federal government. The seed of the idea flourished into a national telephone service to spread the latest information about cancer to the public. Until 1985 when budget constraints led to the cutoff of

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[3]Butler, King, and White, p. 9.

[4]Interview with Courtney Snyder, United States Telephone Association, Washington, D.C., 24 February 1986.

National Cancer Institute (NCI) funds for three offices, the NCI sponsored 21 local centers throughout the United States and an additional two sites in Bethesda, Maryland. The centers' personnel would answer cancer-related questions from callers. This group of centers composed the Cancer Information Service (CIS).

One of the local offices, based in Washington, D.C., answered calls beginning in 1976 until funding expired on June 15, 1985. The vast majority of telephone calls received at the CIS office in Washington, D.C. originated from the District of Columbia and the suburbs of Virginia and Maryland as expected. Two studies conducted during the past decade indicated that black males and females in the District exhibit extremely high rates of cancer. As a result, District of Columbia leaders developed the Metropolitan Washington Regional Cancer Registry (MWRCR) to compile data on the matter. The CIS established a mechanism to allay unwarranted fears of people in the metropolitan Washington, D.C. area and encouraged residents to enter the health care system for precautionary screening procedures.

While any definitive solutions for the high rate of cancer incidence among minorities remain years away, the CIS in Washington, D.C. provided individuals with counseling about cancer-related concerns. The CIS staff supplied the most recent information from the NCI on all types of cancer.

The service offered confidential answers to callers' questions, besides distributing free publications on assorted cancer topics.

The drive to reach the public with cancer information involves promotional campaigns, referrals from friends, and other forms of communication. To better determine the demographic composition of callers, the counselors who responded to the telephone calls queried people about their race, age, residence, and educational background. The counselors also determined the sex of the caller from a predetermined procedure. The key to reach certain demographic groups could involve selecting the ideal communication channels for each. This study will examine the results of data collected from callers of the CIS by counselors who answered their questions. The analysis should reveal tendencies of how various demographic groups in the metropolitan Washington, D.C. area first heard about the CIS.

A preliminary observation of the telephone information service gave impetus to conceptualize the thesis.

## Review of Literature on Causes and Effects of Cancer and Need of Cancer Information

A review of literature in the field further concretized this thesis. The literature review was conducted under the following rubrics: (1) the condition of health care utilization, (2) literature on the causes of cancer,

(3) literature about the relationship between blacks and cancer, (4) literature about the Cancer Information Service, and (5) other cancer and health care information services.

## The Condition of Health Care Utilization Studies

There is a paucity of systematic research findings about health care utilization. Some findings in regard to the use of health and social welfare services appear to have been minimally useful. For example, when findings appear inconsistent with results from other studies, attempts are often never made to correlate results or to account for apparent disparities.[5]

In many cases, the data collected to determine health care utilization patterns contain significant limitations. Most utilization data originate from the records of physicians, hospitals, clinics, insurance companies, and direct personal interviews or questionnaires in social surveys.[6] The value of data collected from hospitals, clinics, and insurance companies is generally limited to the planning and administration of health care agencies. As a result, direct personal interviews or questionnaires in surveys could elicit insightful feedback from health care

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[5]John McKinlay, "Some Approaches and Problems in the Study of the Use of Services--An Overview," Journal of Health & Social Behavior 13 (June 1972): 115.

[6]Ibid., p. 116.

consumers that administrators and physicians may not consider relevant in the delivery of medical services.

Unfortunately, physicians and administrators probably have little opportunity to query persons other than those who seek treatment from them. Individuals who remain outside the health care delivery system might not be reached unless a survey extends beyond a medical office. Even among physicians who have an interest in surveying their patients, the many years of a doctor's academic preparation may not have included training in proper survey research methods. Diligently kept physicians' records may provide a chronological account of patients' visits, their purposes, diagnoses, therapies, and treatment recommendations, but difficulties exist in gaining access to the records.[7]

The lack of many scientific studies of health care utilization leaves antiquated findings to serve as the sphere of knowledge for a great number of physicians. Many mainstream practitioners rely on health studies of blacks published more than a decade ago and assume that findings from years past remain applicable today.[8] Since the earliest times in America, diseases and health care patterns among blacks varied, depending on economic conditions and the

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[7]Ibid.

[8]Jacqueline Johnson Jackson, "Urban Black Americans," in Ethnicity and Medicine, ed. Alan Harwood (Cambridge, Mass.: Harvard University Press, 1981), p. 49.

skills of medical practitioners.[9] Also, a danger exists with self-reported health information. The information frequently leads to the conclusion that blacks suffer more health problems than whites.[10]

Also, a scarcity of information leads laymen to become overconfident about their understanding of cancer symptoms. In 1972, the Blue Cross/Blue Shield Association commissioned a poll and discovered that many persons are overconfident about their knowledge of health facts. Among respondents who participated in the Blue Cross/Blue Shield poll and indicated that they knew the warning signs of cancer, one-third of them could not name even one.[11]

## Literature on the Causes of Cancer

Poor nutrition exerts a strong correlation with the development of cancer. For instance, an elevated risk of cancer occurs among individuals with a low intake of vitamin A.[12] Deficient amounts of either vitamin C or carotene will

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[9]Ibid., p. 37. [10]Ibid., p. 49.

[11]Matilda Butler and William Paisley, "Communicating Cancer Control to the Public," Health Education Monographs 5 (Spring 1977): 8.

[12]Regina G. Ziegler et al., "Esophageal Cancer Among Black Men in Washington, D.C. I. Role of Nutrition," Journal of the National Cancer Institute 67 (December 1981): 1201.

also increase the risk of developing cancer.[13] In addition, experiments with animals revealed that very large doses of vitamin A protect against cancer while a vitamin A deficiency often increases the risk. Vitamin C inhibits cancer development, too, blocking the formation of carcinogens that sometimes form in food or the digestive tract once nitrate is present.[14]

An experiment took place in Washington, D.C. to determine the effect of nutrition on susceptibility to cancer. Researchers categorized food to determine if a link exists between the consumption of certain groups of food and the risk of developing cancer.[15] Foods were classified into two categories. One group contained affluent foods, and a second category consisted of cheaper foods to determine if dietary patterns affected cancer rates.[16] Affluent foods were classified as beef, chicken, lamb, fresh or frozen fish, and shellfish. The cheaper foods category included precooked or processed meat and fish, frankfurters, lunch meat, canned meat, canned fish, bacon, and sausage.[17] The study concluded that a diet of affluent foods diminished cancer risk, suggesting that social class may predict susceptibility to cancer.

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[13]Ibid. [14]Ibid., p. 1204.

[15]Ibid., p. 1199. [16]Ibid.

[17]Ibid.

Dietary patterns could hold responsibility for nearly all major causes of death. For example, a case-control study in Washington, D.C. found a strikingly high mortality rate caused by esophageal cancer and revealed poor nutrition as a primary factor. The least-nourished third of the entire population suffered twice the cancer risk of the most-nourished third.[18]

The study in Washington, D.C. suggested that general malnutrition, probably a mild form, increased the susceptibility of urban black men to esophageal cancer.[19] Even among younger age groups, the black population exhibited a greater percentage of esophageal cancer cases than the white population.[20] Despite clinical research findings that associate nitrite consumption with cancer, esophageal cancer seemed more closely associated with precooked or processed meat and fish consumption than with nitrite intake.[21] The rate of cancer risk declined when persons chose to bake rather than fry meat and dropped further for those who broiled meat.[22]

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[18]Ibid., p. 1204. [19]Ibid., p. 1205.

[20]Metropolitan Washington Regional Cancer Registry Report Series, Vol. 1: Cancer of the Esophagus, with a foreword by Jack E. White (Washington, D.C.: Howard University Cancer Center, the District of Columbia's Department of Human Services, and the Howard-Georgetown Comprehensive Cancer Center, May 1982), p. 20.

[21]Ziegler et al., p. 1205. [22]Ibid., p. 1203.

The high rates of esophageal cancer among blacks in Washington, D.C. contrasted with lower rates in other geographic areas. Throughout most of the United States and the Western World, cancer of the esophagus was relatively uncommon. However, data from a study in South Carolina suggested a prevalence of esophageal cancer among blacks.[23]

Diet seemed responsible for high rates of esophageal cancer in spot locations throughout the world. Two separate studies, 30 years apart in Sweden, found a correlation between a person who smokes tobacco and his susceptibility to cancer of the pharynx, larynx, and esophagus.[24] Until recently, iron and other micronutrient deficiencies existed in northern areas of Sweden, where esophageal cancer appeared unusually common.[25] Poor nutrition is suspected of causing esophageal cancer in Iran, the Soviet Union, and China. Cancer appears endemic in regions with limited diets and impoverished agriculture. Case-control studies in the United States and Japan have demonstrated an association between reduced consumption of certain basic food groups, notably vegetables and fruits, and esophageal cancer.[26]

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[23]Ernest L. Wynder and Irwin J. Bross, "A Study of Etiological Factors in Cancer of the Esophagus," Cancer 14 (March-April 1961): 389.

[24]Ibid., p. 390.

[25]Ziegler et al., p. 1204.

[26]Ibid., p. 1203.

In addition to poor nutrition corresponding to development of cancer, several studies have established a high correlation between consumption of alcoholic beverages and esophageal cancer. Practically no daily requirements for micronutrients and protein result from the intake of beer, wine, and hard liquor, representing empty calories.[27] Ziegler et al.'s Washington, D.C. study indicated a sharply increased risk of cancer among individuals who heavily consumed alcoholic beverages. A Chinese study revealed that 50 percent of esophageal cancer patients consumed pai kan, a strong vodka-like drink that contains between 65 percent and 85 percent alcohol, in comparison to 12 percent of the control group. In Japan, 51 percent of male esophageal cancer patients considered themselves heavy drinkers, while 23.2 percent of the control group put themselves in the heavy-drinker category.[28]

In the early 1980s, studies conducted by the NCI and Howard University found that alcohol consumption was a major risk factor leading to the occurrence of esophageal cancer. Studies conducted by the Howard University Cancer Center about the Washington, D.C. area indicated that two health problems associated with alcohol, esophageal cancer and cirrhosis of the liver, cause unusually high mortality rates

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[27]Ibid. [28]Wynder and Bross, p. 391.

in comparison with national average rates. The Howard University findings determined that the mortality rates for esophageal cancer and cirrhosis of the liver in the Washington, D.C. area ranged between two and three times the national average.[29]

Findings from other studies have indicated socioeconomic status exerts a major role in the development of esophageal cancer. White residents in the District are generally of higher socioeconomic status than blacks. While esophageal cancer occurs much more frequently among blacks than whites, the underlying causes of the disease are probably related more closely with socioeconomic variables rather than race, drug abuse, sexual habits, smoking, or carcinogenic exposures.[30] However, Ziegler et al. disagreed. The association of esophageal cancer with poor nutrition, independent of socioeconomic status, suggested that unidentified aspects of life style are not primarily responsible for high cancer rates.[31] Ziegler et al. acknowledged the influence of socioeconomic status when they cited studies in Puerto Rico and Singapore that demonstrated a relationship between low socioeconomic status and esophageal cancer.

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[29]Metropolitan Washington Regional Cancer Registry Report Series, p. 19.

[30]Ibid., p. 24. [31]Ziegler et al., p. 1204.

A study of cancer rates among the inhabitants of the District of Columbia and the surrounding suburbs indicated similarities as well as stark contrasts between the various demographic groups. An estimated 80 percent of all adult cancer incidences resulted from environmental factors. Exposure to carcinogenic agents during a lengthy period of time, such as between 10 and 40 years, often leads to cancer. The long latency period of cancer causes difficulty in the identification and control of specific causal agents.[32]

A study published in 1980 addressed cancer mortality rates in 10 major U.S. Standard Metropolitan Statistical Areas (SMSAs), identifying Washington, D.C. as an area with unusually high cancer rates among its black (nonwhite) population. An analysis of the data revealed that whites in the Washington, D.C. area exhibited the lowest cancer rates in a comparison with whites from other urban centers included in the study. Black males and black females in the Washington, D.C. area were found to have the highest and second highest cancer rates, respectively, relative to other areas. A follow-up study involved 15 major SMSAs, indicating once again that Washington, D.C. area blacks had the highest cancer mortality rates and white residents among the lowest

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[32]Metropolitan Washington Regional Cancer Registry Report Series, p. 1.

rates. A serious cancer mortality problem appears to exist in the Washington, D.C. area.

The magnitude of cancer mortality rates in a population resulted as a function of three elements.[33] They are: the high incidence of cancer in a population, the stage of the disease at diagnosis, and the survival experience of patients. An optimal effect results when the relationships among these three elements are clearly understood on a cancer-site-specific basis and integrated into a cancer-control program. The MWRCR indicated a positive community effort to record cancer cases, and the dissemination of cancer information to residents seems to represent the logical next step.[34]

Incidence rates for esophageal cancer in Washington, D.C. among black males are between 40 percent and 280 percent higher than among black males in other metropolitan areas.[35] In addition, white males in the District have the greatest incidence rate among other white male populations. Females, regardless of race, exhibit higher than average incidence rates of esophageal cancer than women from other urban areas.[36] An immediate need to diminish the devastating rates of esophageal cancer seems to mandate intensive promotion of

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[33]Ibid. [34]Ibid. [35]Ibid., p. 17.

[36]Ibid., p. 18.

cancer information through the most effective mechanisms available.

Cultural and socioeconomic differences might explain part of the problem with esophageal cancer. The sections of the District that are most centrally located contained the highest esophageal cancer rates in the entire metropolitan area.[37] The areas of highest risk also demonstrated the lowest median family incomes, the highest percentage of families below the poverty level, and the lowest median educational level in the city. The esophageal cancer rate at the bottom of the scale of risk occurred in the section of Washington, D.C. with the highest median family income, the fewest families below the poverty level, the highest educational level, and the fewest number of persons per household.[38] The data suggest a correlation between esophageal cancer and people who live in the most centrally located, poorest, and least educated subpopulations.

## Literature About the Relationship Between Blacks and Cancer

A limited number of studies about the health care needs of blacks have suggested a good deal remains unknown about their health behavior.[39] The relationship between

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[37] Ibid. [38] Ibid.

[39] Butler, King, and White, p. 9.

health institutions and subsequent health patterns among members in a given community needs exploration. Blacks infrequently receive attention in follow-up, longitudinal, or explanatory studies. Also, studies about urban black subjects seem prone to contain generalizations from nonrepresentative and usually extremely small sample sizes, among other shortcomings.[40]

In 1978, the U.S. Department of Health, Education, and Welfare released data that showed racial variations in mortality rates for malignant neoplasms. Except for females under the age of 25 or beyond the age of 65, female mortality rates consistently indicated higher incidence rates among blacks than whites between 1950 and 1976. Black males encountered higher rates than white males in 1960 for malignant neoplasms among the 30-64 age bracket and in 1976 among those past the age of 30. An increase took place between 1950 and 1975 among black males above the age of 35 for the same malignancy, but it decreased among black females below the age of 65 during the same time span.[41]

Reasons for higher rates of cancer among blacks than whites may involve different patterns of drug abuse, smoking, or sexual intercourse, besides nutrition, socioeconomic, and alcohol-consumption variations.[42] The rising cancer

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[40]Johnson, p. 48.

[41]Ibid., p. 57.

[42]Ibid., p. 59.

mortality rates among blacks may also stem from environmental causes, increased longevity, and better reporting of cases.[43] Some researchers propose that environmental factors could explain a significant escalation in cancer mortality rates between 1950 and 1967.[44]

Black females seem more prone than white females to cancer of the esophagus, colon-rectum, pancreas, lung, breast, and kidney. Incidence rates for various sites of cancer among blacks and whites led Siedman, Silverberg, and Holleb to find a 36 percent rise in cancer rates among black males between 1947 and 1969. Cancer sites that demonstrated increased incidence among blacks included the esophagus, colon-rectum, pancreas, lung, prostate, kidney, and bladder.[45]

A higher percentage of females than males in the U.S. poses indirect implications for health care. The scarcity of males, especially in the black community, may exacerbate poverty and health problems, such as alcoholism and cancer of the cervix among female household heads. The inequity in the numbers of females and males may increase the probability of a greater number of partners for sexually active women. A

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[43]Ibid., p. 57.

[44]Ibid., p. 59.

[45]Ibid.

link may exist between multiple sex partners and increased prevalence of cancer of the cervix.[46]

Part of the health problems among blacks may stem from a lack of information. The scarcity of black physicians in the past retarded the dispersion of biomedical knowledge among blacks, although the legal extinction of racial segregation undoubtedly improved the accessibility of urban blacks to mainstream medical care in recent years. Largely as a result of racism and poverty, mainstream medical care often proved inaccessible to urban blacks for many years following the cessation of slavery. In the early 1970s, Bartley declared that "the black population must look to the Negro physician for health care."[47]

The rising levels of education among blacks necessitate continuing modification in the way physicians communicate to black patients. Nearly half of all blacks beyond the age of 25 possess high school diplomas. Physicians should consider the comprehension level of each patient when the time arises to explain a specific medical problem.[48]

One researcher linked a reluctance of certain blacks to seek medical attention to lingering behavior patterns from the days of slavery. After the abolition of slavery, blacks

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[46]Ibid., p. 43.

[47]Ibid., p. 38.

[48]Ibid., p. 44.

generally became responsible for their own health care. At the time, the tradition of European and African beliefs became part of a folk medical system that influenced both blacks and poor whites in the South. After the Civil War, the treatment of disease became the responsibility of the blacks themselves. The need to avoid expensive medical treatment focused attention on the "root doctor" or "hoodoo-man" as the healer of diseases.[49]

A modern view of black medical care gives a different perspective. The Howard University Medical Center in Washington, D.C. practically never turns down anybody because of an inability to pay, said Jack White, M.D., director, Howard University Cancer Center. Options exist for those who lack funds to receive medical care, he said. One, the hospital staff can turn the case over to a social worker. In most instances, the individual will receive medical treatment. Only a small group of persons will not be accommodated, White said. Two, patients without any money can often gain admission to the hospital as an educational case for training medical students, he said.[50]

A very small percentage of the indigent receive no help. Some of them are foreign. White recalled the case of

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[49]Ibid., p. 37.

[50]Interview with Jack White, M.D., Howard University Cancer Center, Washington, D.C., 18 September 1984.

a Guyanan boy who desperately needed medical attention for a malignancy. "I couldn't admit him," White said. The boy may have been admitted if his case was an emergency. A legal requirement forces all hospitals to treat patients in an emergency. Consequently, sometimes cases that could be regarded as nonemergency situations are identified as actual emergencies to insure that an individual receives care.[51]

Reimbursement from insurance carriers often creates troublesome situations that discourage medical screening, even though the practice may save lives. "Most third-party carriers don't pay for screening," White said. "They pay for care, not prevention." Until recently, no emphasis was placed on preventive care, White said. Screening offers a chance to reach target groups, such as those who may have been exposed to carcinogenic substances.[52] White identified cancer of the following sites as common among blacks: breast, cervix, rectal, colon, thyroid, mouth, lung, and prostate.

The phenomenon of patients seeking medical care from physicians with similar backgrounds needs to be recognized. "Most black doctors take care of mostly black patients," said White. "Most patients I got when I began to practice medicine were referred mostly from black doctors." The same

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[51]Ibid. [52]Ibid.

situation exists with other groups who share an identity. For example, Jewish physicians probably refer patients to other Jewish physicians when a patient needs to see someone from a specific specialty.[53] "There is no inherent bias," White said.

The reluctance of medical schools to admit more than a handful of black students during the days of segregation "certainly affects what's happening now," said White. The lack of health professionals within minority groups robbed those communities from acquiring maternal, fetal, and infant health care advice from neighbors who work in the health professions. Besides a deficiency of health care information, inadequate medical care, low socioeconomic status, and poor nutrition also lead to poor health among minorities. Socioeconomic status ranks as a major factor for poor health, White said. The poor have more immediate priorities than health care, such as providing food for the kids, housing, and clothes "to keep from freezing to death," White explained. "Poor males put health care way down the list," he added. "They tend to ignore minor aches and pains and other symptoms, and develop more virulent types of cancer," he said.

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[53]Ibid.

A likely byproduct of low income is poor nutrition, which adversely affects toleration of radiation therapy and chemotherapy, White said. Nutrition exerts a bearing on survival, he said. Other factors that cause cancer include "stresses, strain, and anxiety" that develops undesirable life cycles, White said.

Differences between blacks and whites must be couched carefully, explained Bill Palm, former CIS health educator, Washington, D.C. Comparisons "can sound racist," especially when health problems are linked to sexual patterns and the number of sex partners. The ratio of gonorrhea cases between blacks and whites reaches 20:1, Palm said. Part of the difference involves reporting, he said. The disease also correlates closely with inner-city, low-income neighborhoods.[54] The situation signals a problem with the health status of low-income people, Palm said. Differences in knowledge, diagnostic services, and adherence to proper medical care all play a role in the quality of health care among low-income groups, he said. Infant mortality affects blacks more than whites in the U.S., said Palm. A lack of prenatal care may hold responsibility for the difference, he said.

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[54]Interview with Bill Palm, Howard University Cancer Center, Washington, D.C., 18 September 1984.

Low income and minimal education definitely seem associated with infant mortality.[55] One of the poorest regions, South Carolina, still possesses the belief that eating clay will help produce a healthy baby, said James Pence, director of health planning, Pee Dee Regional Health Systems Agency, Inc., Florence, South Carolina. Generations of pregnant females, especially blacks, have dipped into the deposits of clay mixed with dirt and eaten the substance. The consumption of clay actually inhibits retention of iron in the women, hindering the effort to give birth to a healthy baby, Pence said. Despite attempts to educate them, many families perpetuate the clay-eating ritual, said Pence.

Virtually no progress in the fight to reduce infant mortality rates among blacks in the U.S. during the past few years forced the Department of Health and Human Services Secretary Margaret Heckler on the hot seat during a Senate hearing.[56] She called the problem a "priority," but when queried about why the budget appropriation for preventive care was slated for cuts, Heckler responded that the record national budget deficit forced reductions. Later in the same week, Heckler told the Budget Committee in the House of

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[55]Interview with James Pence, Pee Dee Regional Health Systems Agency, Inc., Washington, D.C., 11 March 1985.

[56]Testimony of Margaret Heckler before the U.S. Senate Appropriations Subcommittee on Labor, Health and Human Services, and Education, U.S. Department of Health and Human Services, 5 March 1985.

Representatives that the HHS share of cuts would force a 2.2 percent cut in current services.

One pediatrician has said even school-age children can understand health problems, including cancer. "You can get across simple concepts," said Clare Dykewicz, M.D. She added that inadequate nutrition undermines the health of children and leads to inhibited growth and slow learning. At the University of Chicago, where she served as a medical resident and supervised the medical care of inner-city children, Dykewicz noticed an "iron deficiency" among her young patients. Dykewicz said she suspected children were not fed nutritionally balanced meals, even in households with adequate income. "Families may spend their money on Twinkies and pop," Dykewicz said.[57]

"Dramatic deficiencies" exist in the diets of youngsters in Bangladesh, where Dykewicz worked for several months in 1984 to provide medical care for malnourished children. "In Bangladesh, the first priority for food is the father/husband, and sick children get whatever is left over," Dykewicz said. "Families will criticize women who take a child to the hospital, even if not seeking medical attention means the death of a child. The child-mortality rate is correlated with literacy in both Bangladesh and Chicago."

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[57]Interview with Clare Dykewicz, M.D., University of Chicago Medical School, Flint, Michigan, 25 December 1984.

A faculty member at Northwestern University Medical School, Mark Dykewicz, M.D., treats cancer patients at several different hospitals, where he has detected "distinct clinical populations." For example, cancer rates at the Veterans Administration (VA) hospital where he supervises the medical care of patients are "far higher" than at the other university-affiliated hospitals. Dykewicz characterized VA patients as typically poor and black, adding that many of them have histories of heavy smoking and drinking, which lead to high rates of lung cancer, pharaxyl cancer, esophageal cancer, and laryngeal cancer.[58]

## Literature About the Cancer Information Service

One mechanism to promote positive information about survival rates and new forms of treatment is the Cancer Information Service. Before the loss of funding for the CIS in Washington, D.C. during June 1985, the cancer telephone service provided area residents with an opportunity to receive answers to their cancer-related questions. Since 1976, when former Massachusetts Senator Edward Brooks placed the first call to the CIS in Washington, D.C., the telephone service in the District had responded to more than 15,000

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[58]Interview with Mark Dykewicz, M.D., Northwestern University Medical School, Flint, Michigan, 25 December 1984.

telephone inquiries from the metropolitan Washington, D.C. area.[59] After the creation of the National Cancer Act in 1971, the National Cancer Institute funded the CIS to reduce the widespread fear of cancer through the availability of information to help the public understand and cope with the disease.

Howard University, where the clientele are almost universally black, and Georgetown University, which serves a large number of white patients, combined forces to combat the health risks associated with cancer. The National Institutes of Health issued a CIS contract jointly to both cancer centers to coordinate service to all area residents. White and John Potter, M.D., who directs the Georgetown Cancer Center, each contributed 5 percent of their full-time hours to the CIS in the battle to wipe out cancer, until funding expired and the CIS closed in 1985.

The CIS in Washington, D.C. not only answered queries from people who sought information about cancer, but also conducted numerous special projects, according to a Howard University Cancer Center pamphlet. The special projects include a program in cancer prevention geared toward students in grades K through 12; instruction to Washington, D.C. area clergy about how they can assist members of their

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[59]Howard University Cancer Center, pamphlet (n.d.).

congregations to better cope with cancer; a speakers bureau designed for the lay public and health professionals; a project intended to contribute to the early detection and treatment of breast, colon-rectum, and prostate cancer among senior citizens; and the development of educational materials for target groups.[60]

Regional CIS offices collectively form the Comprehensive Cancer Center Communications Network (CCN) under the direction of the NCI. The network is intended to deliver accurate and up-to-date information on cancer causes, prevention, early detection, diagnosis, treatment, rehabilitation, and continuing care. Each CIS office in the network submits a semi-annual report to explain in detail how the activities of the past six months helped meet the cancer-information needs of the community.[61]

In 1979, a National Publicity and Promotion Task Force was established to link members from both the CCN and NCI to develop short- and long-range promotional plans. The group identifies target audiences and develops strategies to publicize the CIS on a national level. The task force also

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[60]Ibid.

[61]National Cancer Institute, "National Plan for Publicity and Promotion of the Cancer Information Service" (Bethesda, Md.: NCI, February 1982). (Mimeographed.)

reviews existing communication campaigns and recommends modifications.[62]

An important objective of the CIS is to reduce the widespread fear of cancer and to heighten public understanding of the disease. The NCI, ACS, and scientists from member institutions of the National Cancer Program provide CIS offices with extensive summaries of basic cancer information and frequent updates with new advances in the treatment of cancer. Every CIS office also maintains a directory of local cancer-related resources, including physicians from local and state medical societies and medical specialists from regional career centers.[63]

Nearly half of all calls to the CIS originate from cancer patients and their relatives. The first CIS became operational in February 1976 and handled 300 calls in the inaugural month. Since then, the CIS has expanded throughout the U.S., answering more than one million calls. The average call volume for all CIS offices combined tops 21,000 per month, rising every year until the loss of funding for three offices: the Howard/Georgetown CIS, the Duke University CIS, and the Mayo Clinic CIS.[64]

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[62]Ibid.

[63]National Cancer Institute, "Questions and Answers: Cancer Information Service" (Bethesda, Md.: NCI, n.d.). (Mimeographed.)

[64]Ibid.

Both health professionals and specially trained volunteers answer questions from callers. Representatives of local medical organizations and staff of regional cancer centers offer professional review of CIS operations on a regular basis. A system of test calls serves as a further means of quality control. Interestingly, the Washington, D.C. CIS earned a near-perfect score, leading all other CIS offices before eliminating funding to the Howard/Georgetown CIS.[65]

National CIS media publicity plan. The NCI launched a national promotional campaign in January 1983 to publicize the CIS. The objectives of the effort included increasing the total call volume and public awareness of the CIS, especially among health professionals and selected high-risk target groups. Between September and November 1983, a series of promotional activities were conducted to capture national media attention for the CIS program. The campaign focused on the CIS as an established service with access to the latest information about cancer treatment breakthroughs via computer data bases.[66]

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[65]Ibid.

[66]National Cancer Institute, "Cancer Information Service National Media Publicity Plan 1-800-4-CANCER" (Bethesda, Md.: NCI, 6 September 1983), p. 1. (Mimeographed.)

The publicity blitz consisted of mailing promotional materials in three waves to members of the media. Organizers categorized the media into distinct groups, aiming messages at the general news media, science writers, syndicated columnists, and medical/health publications. The first wave of materials mailed to each group communicated the creation of a new toll-free telephone number, 1-800-4-CANCER, which covered all parts of the United States except Hawaii, Alaska, and the District of Columbia. The second wave of promotional mail contained broader information sent to selected members of the media to generate feature coverage. The third wave of the campaign encompassed the response from the CIS to queries for additional information from both the media and public that were sparked during the first two waves.[67]

A media kit developed at the NCI bluntly informs CIS offices about "tactics" that may lead to positive news coverage about the CIS. The kit identifies seven examples of story angles that may attract news coverage. One story idea advises local CIS officials to release data from research findings on the demographic characteristics of CIS callers, highlighting low utilization among certain populations.[68]

In recognition of the high rates of cancer and low utilization of the CIS among blacks, the Office of Cancer Communications (OCC) at the NCI formed the Black Audiences

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[67]Ibid., p. 2. [68]Ibid., p. 3.

Outreach Task Force. The task force consists of representatives of numerous CIS offices throughout the nation who participate in black outreach activities. The objective of the outreach program is to develop a high-visibility promotion that will focus attention on blacks and cancer and generate specific recommendations for future campaigns to reach blacks.[69]

A preliminary report to improve awareness of cancer among blacks was released in December 1983. The report recommended more promotional efforts, intensified communication of ways to reduce the risk of developing cancer, and warned of the need to boost call volume to the CIS by blacks. The task force also presented a paper at the National Black Congress on Health Law and Economics (BCHLE) convention during July 1984, gaining the attention of more than 7,000 delegates. Member organizations of the BCHLE include the National Bar Association, National Black Nurses' Association, National Optometric Association, National Pharmaceutical Association, National Podiatry Association, and the Black Caucus of Health Workers of the American Public Health Association. As a result, the task force reached opinion

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[69]National Cancer Institute, "Update on Activities of the Black Audiences Outreach Task Force" (Bethesda, Md.: NCI, June 1984), p. 1.

leaders in black communities across the country who could become influential promoters of the CIS.[70]

The National Cancer Act of 1971 authorized the development of comprehensive cancer centers and specialized cancer centers to transfer and expedite cancer research results into effective clinical practice. The 21 comprehensive cancer centers also hold responsibility for providing coordination and leadership within their respective geographic regions. In communication, education, and outreach, the NCI, ACS, and comprehensive cancer centers are the most visible participants in the National Cancer Program. The primary role of the network of comprehensive cancer centers is to disseminate and interpret new and existing knowledge produced through the National Cancer Program to concerned communities.[71]

At the Memorial Sloan-Kettering Cancer Center in New York, a communications office opened in 1975 under the auspices of the Cancer Center's control program. The communications office launched numerous Cancer Center and citywide programs in the fields of health communications, school health, health education, public information, and nursing education. Through television, radio, the press, and

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[70] Ibid.

[71] Memorial Sloan-Kettering Cancer Center, Proceedings of the 1980 International Symposium on Cancer (New York: Grune & Stratton, 1980), p. 762.

other media channels, the residents of New York City became aware of the Cancer Center's communications office and its programs, including the New York City CIS.[72]

Confusion about cancer and fear about the disease led to the formation of the CIS. A Gallup Poll conducted for the ACS found that cancer ranked as the number one disease concern of the public. Nearly 60 percent of American respondents named cancer as the chief health concern, in comparison to 32 percent for heart disease. As a result, an important objective of the CIS became the reduction of the public's fear of cancer with the latest information about cancer-treatment developments.[73]

A 1979 evaluation of CIS callers in New York City indicated that blacks accounted for 8.7 percent of the calls, and Hispanics generated 3.5 percent of the telephone contacts. Special promotional programs to reach both black and Spanish-speaking New Yorkers included subway-car-card campaigns and public-service announcements. Nearly 5,000 colorful cards were distributed along all lines of the New York City subway station to promote the CIS. Surveys indicated that the awareness level of the CIS more than doubled in the two months following the posting of the cards. Statistics compiled by the New York City Subway Advertising

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[72]Ibid., p. 763. [73]Ibid., p. 764.

Company revealed subway advertising as an effective way to reach large proportions of blacks, Hispanics, senior citizens, and lower-income groups that underutilize the CIS.[74]

Overall, black Americans have poorer health than the general population. As a way to combat the problem, many health care professionals are applying social marketing techniques to target messages to blacks. Efforts to communicate health information to blacks require recognition of sociological parameters, including institutional racism, inequities of the health care delivery system, socioeconomic status, health belief systems, and health-care-seeking behavioral patterns.[75]

One of the National Institutes of Health, the National Heart, Lung, Blood Institute (NHLBI), studied the link between communications strategies and minority audiences. The NHLBI Task Force on Diffusion Strategies in Minority Populations identified that diffusion of health information among culturally diverse populations depends on individual characteristics, demographic characteristics, communication channels, and community attributes. These

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[74]Ibid., p. 766.

[75]Les Butler, "Communicating Health Information to Black Audiences" (paper presented at the Congressional Black Caucus Health Braintrust Workshop, Washington, D.C., 28 September 1984).

factors are believed to affect health status, how well groups accept health information, and access to health care.[76]

A traditional vehicle to reach black audiences has been public service announcements (PSA's) on television and radio. Until recently, commercial broadcasters provided these 10-, 30-, and 60-second messages as a service to the local community. Now, Federal Communication Commission (FCC) regulations limit the number of PSA's commercial television and radio stations need to offer a community. Regardless of the new regulations, television and radio PSA's involve significant challenges that include an inability to control the placement of messages where viewer/listenership is highest for the targeted audience, the cost of production, competition for PSA time, and development of creative strategies that will command viewer/listener attention.[77]

As an additional complication, sensitive economic and political difficulties exist in launching an anti-smoking campaign that requires the use of local and national minority publications. A sizable number of these publications, if not the vast majority of them, rely on advertising dollars spent by tobacco companies. In 1983, two of the top 25 magazine advertisers were tobacco companies with combined ad expenditures that totaled nearly $300 million.[78]

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[76]Ibid. [77]Ibid. [78]Ibid.

The CIS developed a Black Task Force to boost the current underutilization by black Americans. Further work remains ahead to reach blacks with health information, and Butler recommended:

. Heightened use of teachers, clergy, and community leaders as intermediaries in the dissemination of health information to blacks;

. Creative strategies that focus on specific socio-economic and geographical factors;

. Increased use of pre- and post-testing methods;

. Training of minority health care providers in the effective use of communication strategies;

. Exploration of new communications technologies in disseminating health information;

. Increased involvement of black sociologists, epidemiologists, and communications specialists in the planning stages of health-information campaigns.[79]

But overall quality control of all CIS offices requires two stages. The first stage consists of training and certifying personnel at the CIS offices. The second stage involves test calls to assess the performance of telephone counselors. A test call measures four dimensions of quality: accuracy (correct, timely, complete, precise),

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[79]Ibid.

convenience (accessible, prompt), appropriateness (responsive, referrals, language), and staff sensitivity (empathetic, friendly, credible).[80]

A more comprehensive evaluation occurred in 1984 with a national survey of CIS users. The survey was designed to record the perceptions and behavioral actions of CIS callers after they used the service. Preliminary results of the NCI survey, based on 1,745 respondents, revealed that 93.8 percent of the callers stated the service was useful and 95.6 percent described the CIS counselor as clear and easy to understand. The glowing results continued as 93.8 percent of respondents rated the CIS telephone counselors as knowledgeable, while more than 95 percent indicated the staffers were courteous, friendly, and sympathetic.[81]

The ultimate test may arise when callers regard the service as helpful enough to use again or recommend to someone else. More than 96 percent of the callers throughout the country answered that they would call the CIS again if they had other questions, and nearly 55 percent had already recommended the CIS to others. Additionally, those who expressed satisfaction with the CIS totaled more than 91 percent. A similar number of respondents also took action following their contact with the CIS. Among those who took

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[80] Ibid. [81] Ibid.

action, more than 81 percent of the respondents read materials that they received from the CIS through the mail. Nearly 91 percent of the respondents identified the CIS as important in leading them to take action.[82]

The national demographic characteristics of respondents in 1983 revealed that females composed 71.8 percent of CIS callers. Also in 1983, the age group most likely to call the CIS included those between 30 and 39, generating 25.6 percent of the calls. The 20-29 age group initiated 21.9 percent of the calls, and those age 40-49 added 16.3 percent of the telephone contacts. Those between age 50 and 59 contributed 14.3 percent of the calls, and others age 60 or older combined to make 13.9 percent of the CIS calls. The age category of 19 and younger totaled only 7.9 percent of the CIS telephone calls.[83]

Nationally, better-educated Americans seemed more likely to contact the CIS than their less-educated counterparts. Callers with at least a high school education combined for more than 85 percent of the CIS contacts. Those with no more than a grade school education accounted for barely 4.0 percent of the calls. Others with more than a grade school education, but who never earned a high school diploma, delivered less than 10 percent of the calls.[84]

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[82]Ibid. [83]Ibid. [84]Ibid.

The racial composition of CIS callers in 1983 revealed that 87.3 percent of the respondents were white and only 7.4 percent were black. Hispanics accounted for 3 percent of the total, and American Indians, Asians, and other categories combined to place less than 2 percent of CIS calls.[85]

The NCI formed an Evaluation Task Force, consisting of CIS personnel, evaluation specialists, cancer-control specialists, and NCI staff, to address CIS quality control as one aspect of an overall evaluation program. A list of "Dimensions of Quality" took shape, with the "test call" approach selected as an appropriate methodology to evaluate five of the six dimensions of quality for the CIS telephone service. The six dimensions included accuracy, convenience, appropriateness, staff sensitivity, effectiveness, and standardization.[86] Objectives of the test call are to assess the quality of responses, to identify areas of deficiency within individual offices, and to provide feedback and corrective action to network offices.[87]

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[85]Ibid.

[86]Judith Stein and Thomas Kean, "Quality Assessment of the Cancer Information Service: Evolution of a Test Call System," Issues in Cancer Screening and Communications (New York: Alan R. Liss, Inc., 1982), pp. 471-72.

[87]Ibid., p. 474.

Other Cancer and Health Care Information Services

A further review of literature under this rubric generated some relevant findings. For example, some callers who used the Can-Dial system reported no reaction or change in behavior, while more than 60 percent attributed a beneficial result with the service. Among the 60 percent who received help, two-thirds reported a health-related change in behavior, while the remaining one-third split their responses between either a positive action unrelated to health or an indirect behavior change, such as anxiety relief.[88]

The total number of calls increased substantially immediately following television announcements about the Can-Dial service, but subsided quickly with the disappearance of the telephone number from the screen and the eyes of viewers.[89] Television ranked fourth as the source of information that callers reported influenced them to call Can-Dial. The response fell far short of brochures, the top source of attracting calls. Brochures accounted for more than 60 percent of the calls at a Can-Dial system telephone line. Of course, brochures require printing and distribution

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[88]Gregg S. Wilkinson, Edwin A. Mirand, and Saxon Graham, "Cancer Information by Telephone: A Two-Year Evaluation," Health Education Monographs 5 (Fall 1977): 260.

[89]Ibid., p. 255.

costs, while public advertising exists with other sources available to disseminate the information.[90]

Researchers found that the likelihood of persuading an individual to call Can-Dial can be predicted, based on a person's job. An examination of occupations relative to the number of telephone calls that reached Can-Dial revealed that students ranked as the most frequent users. The next most probable callers were housewives, clerical workers, professionals, and the unemployed. Interestingly, three of these occupational categories are likely to have free time and easy access to telephones during a large portion of the day.[91]

The ultimate test for any telephone health service might be to influence callers through the diffusion of information to reduce cancer risk among community members. Callers of Can-Dial were asked whether they discussed the service with others, and 61 percent responded affirmatively.[92] Discussions with friends and acquaintances of physicians with cancer-stricken individuals and the availability of a cancer telephone service, when taken together, all probably played a part in any behavior change undertaken.[93]

An experiment in the Can-Dial system discovered that utilization in two low-responding communities rose through

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[90]Ibid. [91]Ibid., p. 256.

[92]Ibid., p. 260. [93]Ibid., pp. 262-63.

intensive promotional activities. In addition, a much larger series of experiments measured the effect of brochures in well-defined areas. The researchers found that the rate of response soared during the period when the brochures were mailed, before falling back to the previous level of total inquiries when the mailing stopped.[94] Findings from a two-year evaluation of the Can-Dial cancer public information program at Roswell Park Memorial Institute revealed that brochures stimulated more than half of the responses, while public service announcements through the local media accounted for close to 30 percent.[95]

Stepped-up promotional activity in seven specific experimental communities usually resulted in heightened response from the public for a short period of time. Experiments in various communities throughout Erie County suggested that utilization can be increased substantially through direct mailing of a brochure, describing the program and listing a telephone number.[96] An important aspect of the activity of a cancer telephone information program is to improve public awareness about the service.[97]

Health-related telephone education services can serve to answer many of the user's pressing questions in privacy,

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[94]Ibid., p. 256. [95]Ibid., p. 261.

[96]Ibid. [97]Ibid., p. 255.

free of charge, at a time convenient for the caller.[98] From an educational aspect, unlike many audiences, the caller's decision to use the service suggests demonstrated interest in the topic and a good probability to pay special attention to the information. Evidence from the Can-Dial service seems to indicate that the caller may take desired action partly as a result of the call.[99]

Since 1973, Tel-Med, a nationally franchised health-information system, has provided medically certified information on a broad range of topics to telephone users.[100] Information is provided free to callers who request specific tapes from a tape library. Call volume varies in different systems, depending on community size and hours of operation. Effectiveness is difficult to determine because most telephone information systems have been subject to only limited evaluation. Among the evaluations, they generally consisted of an analysis of call volume and topic popularity. As the number of telephone services rises, this method of disseminating health information for a medical-news-hungry public becomes a considerable force.

Several evaluations of the Tel-Med system have revealed notable findings. In a Winston-Salem study, respondents were asked where they first heard about the

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[98]Ibid., pp. 262-63. [99]Ibid., p. 263.

[100]Diseker, Michielutte, and Morrison, p. 229.

Tel-Med Service. Respondents age 21 or older most often cited the newspaper as their source of information. This group of respondents identified the category of "friend/ relative" as the source of their initial awareness of Tel-Med next most frequently. In addition, those age 21 or older also ranked the categories of "television/radio" and "brochures" as important information sources. The Tel-Med listing in the "telephone book" also exerted some influence. The Diseker et al. study further found that among respondents in the entire sample, education and income levels positively correlated with the use of Tel-Med. Interestingly, once individuals at different levels of education and income became informed of the service, they displayed a pattern of use similar to other groups. As a result, the researchers concluded that motivation for using Tel-Med failed to demonstrate a correlation between utilization and either income or educational attainment.

A limitation of the Winston-Salem study needs to be recognized. The sample in the survey differed slightly from the population of the telephone area. An overrepresentation of adults with a high school education or better occurred along with a minute underrepresentation of males. The overrepresentation of better-educated adults might have biased the results because highly educated respondents are less likely to report that they received useful information. A

proven trend for females to use Tel-Med more than males might have caused the underrepresentation of males to bias data.[101]

More females than males expressed an awareness of Tel-Med before the interview. The survey also established a relationship between socioeconomic status (defined as education and income) and knowledge of Tel-Med for adults age 21 or older. A higher percentage of middle-aged adults had prior knowledge of Tel-Med than either respondents under age 21 or those older than age 59. Sixteen percent of the sample population in the Winston-Salem community used Tel-Med, and approximately 37 percent of respondents with prior knowledge of the service actually placed a call. While a smaller proportion of younger respondents in the Diseker et al. studies had prior knowledge of Tel-Med, the young people who heard of the service were more likely to have used it than older people.[102]

Respondents age 50 or older indicated a greater likelihood to call the Tel-Med about personal health problems than adults between the ages of 21 and 49.[103] Women expressed more of a tendency than men to contact Tel-Med because someone they knew had a health problem. More than 80 percent of the Tel-Med callers in Winston-Salem mentioned

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[101]Ibid., p. 233.

[102]Ibid., p. 231.

[103]Ibid., p. 232.

that they contacted the service more than once. In comparison, a survey of 522 Pittsburgh households in March 1978 revealed that 72 percent of the respondents had called the service more than once. The Winston-Salem respondents who reported repeated use of Tel-Med were more likely than others to seek medical care.[104]

The overall validity of the Winston-Salem survey results draws considerable support from the independent study of Tel-Med conducted in Pittsburgh during 1978. The Tel-Med library contained information on topics of interest to 87 percent of the Winston-Salem respondents. At least 40 percent said they received a "great deal" of information. An inverse relationship was found to exist between educational level and the degree of information received.[105]

A closer analysis of responses from adults revealed a pronounced tendency to report the newspaper as the first source of information about Tel-Med. More than 25 percent of adults between the ages of 21 and 29 identified the newspaper as the first source of information, compared to slightly more than 47 percent of adults age 60 or older who responded similarly. Brochures also exerted considerable influence on young adults.[106]

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[104]Ibid., p. 233. [105]Ibid.

[106]Ibid., p. 232.

The findings of Tel-Med studies further established variations between males and females in regard to the time of day when they called. During the pretest, female respondents contacted the service more than males in the morning and afternoon. In contrast, the largest percentage of males reached Tel-Med later in the afternoon and during the evening.[107]

Research questions for the Winston-Salem Tel-Med system were devised to determine user characteristics, user motivation, action taken, possible benefits, and needed improvements. Nearly one-fourth of the survey respondents indicated that Tel-Med encouraged them to seek medical or dental care when they would have delayed it. After several tests for possible biases, the researchers concluded that interviewers were able to obtain reliable, unbiased data. The test for biases involved an alteration of the order in which the responses to three questions were presented. For example, the responses to a question concerning the overall evaluation of Tel-Med were: "very useful," "fairly useful," and "not useful at all." The most positive response was read first for one-half of the respondents and the most negative response read first for the other one-half. An examination of the three questions treated this way revealed no significant differences in the percentage of positive responses.

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[107]Ibid., p. 230.

Further tests were designed to detect differences between interviewers with respect to the awareness, use, impact, and evaluation of Tel-Med. Little difference emerged.[108]

Results from a Singapore study offer cross-cultural validation of findings from the Tel-Med studies. A Family Planning Telephone Information Service was instituted in March 1974 to provide an extensive on-going education and information service for the entire adult population of Singapore.[109] The service is intended especially to serve young, working people who might not have the time or the inclination to visit family planning clinics. Similar to the cancer telephone services in the U.S., the Singapore service permitted a convenient means of obtaining immediate and reliable information on contraception, sterilization, and abortion.[110]

Publicity of the Singapore service accelerated in 1975. During the first two months of the service, news releases were published in Chinese, Malay, and English press.[111] The source where callers first heard about the service varied significantly from comparable studies with

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[108]Ibid.

[109]Wan Fook Kee, Margaret Loh, and Chen Ai Ju, "Singapore Family Planning and Population Board Family Planning Telephone Information Service," The Nursing Journal of Singapore 16 (n.d.): 88.

[110]Ibid. [111]Ibid., p. 89.

cancer services in the U.S. Newspapers caused 47.4 percent to call the service, television led to 18.6 percent of the calls, friends and spouses accounted for 10.3 percent, and radio gained credit for 8.3 percent.[112] Television dominated other sources as the leading cause of CIS queries in the District.

Two methods of publicizing the service were given greater emphasis in 1975. First, efforts to publicize the Singapore telephone service through newspapers, television, radio, and rediffusion were intensified. The campaign involved more frequent publicity for longer periods of time. Second, the telephone number was printed in all pamphlets, posters, and other publicity items such as calendars and sewing kits. In 1974, most of the calls were received in months when the Singapore service gained substantial publicity through television, radio, newspapers, and cinema. The correlation indicates an unquestionable relationship between publicity and utilization of the service.[113]

The telephone number was printed in the 1974 issue of the Singapore Telephone Directory. Newspapers exhibited great success in generating calls, probably because the literate population in Singapore tops 76 percent.[114] More than

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[112]Ibid., p. 91.

[113]Ibid., p. 89.

[114]Ibid., p. 91.

50 percent of the male callers read about the service in the newspapers, ranking it as unquestionably the most important medium of information.

An Overview

A lack of studies exists that have examined health care utilization patterns, especially among blacks. Consequently, many health care professionals rely on findings from more than a decade ago to determine health care utilization tendencies. Thus, insufficient current information about utilization patterns prevents health care professionals from knowing which demographic groups largely remain outside the health care system.

Another problem involves the need to reduce cancer risk. Studies of populations throughout the world established a link between poor nutrition and the development of cancer. Findings from other studies suggested low socioeconomic status is highly correlated with certain types of cancer. Exposure to carcinogenic agents in the environment was also found to heighten cancer risk. In addition, alcohol consumption, and in some instances drug abuse and sexual habits, have been identified as activities that increase susceptibility to cancer.

Numerous factors could explain why blacks in the Washington, D.C. area exhibit a higher incidence of cancer. For example, poor nutrition and lower socioeconomic status

seem to more closely identify the status of blacks than represent whites. Among other potential cancer causes, smoking, alcohol consumption, drug abuse, and multiple sex partners could account for greater cancer risk among blacks.

Knowledge, availability of diagnostic services, and adherence to proper medical care all play a role in the quality of health care for minorities. Poor black males put health care way down the list of priorities, leading to the development of more virulent types of cancer. Also, factors such as poor nutrition adversely affect toleration of radiation therapy and chemotherapy, reducing the chances of survival.

Despite a near-perfect score on the test call and a share of black callers that doubled the national average, the NCI eliminated funding for the CIS in Washington, D.C. A disappointed Dr. White said the Howard/Georgetown CIS emphasized direct contact within the black community to solicit support from ministers and other neighborhood leaders, but when the time came to renew funding, the NCI was "interested in call volume." The requests from community organizations for cancer-information presentations still occur, he said, but all CIS staffers lost their jobs. The local CIS cost $300,000 per year, and the NCI called it "too expensive," said White. "They didn't offer any negotiations. It was quite a blow, I'll tell you."

Two objective observers expressed sympathy for the loss of the CIS in Washington, D.C. In July 1984, the local chapter of the American Cancer Society (ACS) began to field telephone calls, offer information, and occasionally conduct community outreach programs. A public information specialist with the ACS, Elena Fletcher, described the relationship with the CIS before the closure as cooperative. "We were sorry that it closed," Fletcher said. "We haven't done anything differently than before it closed."[115] Joe Bangiolo, chief, NCI Information Resources Branch, which is not involved with the CIS, expressed disappointment with the shutdown of the local CIS but said unfortunately "the number of telephone calls is usually the determining factor."[116]

Numerous health-information services exist throughout the United States and the world. The Can-Dial cancer service, based at Roswell Park Memorial Institute in Buffalo, New York, found utilization can escalate with direct mailing campaigns of a service brochure. The nationally franchised health-information Tel-Med system provides taped messages that provide medically certified information on a broad range of topics, extending beyond cancer. More Tel-Med callers identified the newspaper as the source where they first

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[115]Interview with Elena Fletcher, American Cancer Society, Washington, D.C., 24 February 1986.

[116]Interview with Joe Bangiolo, National Cancer Institute, Washington, D.C., 18 February 1986.

heard about the service. A Family Planning Telephone Information Service begun in 1974 offered an extensive on-going education and information service for the entire adult population of Singapore. Newspapers unquestionably finished as the best forum to publicize the service, especially among men, as more than 50 percent of the male callers indicated learning about the service this way. Of course the results should not seem surprising as the literate population in Singapore tops 76 percent.

In summary, cancer appears to be prevalent among blacks and whites, but a paucity of information about cancer thwarts efforts to curb cancer risk. The emergence of health-information services offers hope that current deficiencies in the assessment of utilization patterns will be eliminated. In the meantime, physicians continue to discover new cases of cancer every day that may have been preventable.

## Rationale for the Study

The intent of the study about the Washington, D.C. CIS is to determine the current utilization patterns among the general population and specific demographic groups. The results may give health professionals at Howard and Georgetown Universities in Washington, D.C. an indication of

where strengths and weaknesses rest in regard to meeting the cancer-information needs of the most vulnerable groups.

Findings of the study could help the fields of journalism and mass communication examine their potential to disseminate health care information to the public. The high rates of cancer among minorities in the Washington, D.C. area indicate one of the greatest needs for an assessment of possible health-improving benefits of the media efforts in the nation's capital.

Community leaders in government and health care already have recognized the high cancer rates in the District as a serious problem, and results from the study may gain the attention of high-level decision makers. Attentive listeners with open minds may take discoveries from the study and develop health policy based on the findings.

The disclosure of the mass media's significant influence to reach the public with health care advice may encourage other researchers to conduct similar investigations and eventually create a topic for academic journals that is as popular as political research.

# CHAPTER II

# STATEMENT OF THE PROBLEM, PURPOSE OF THE STUDY, AND DEFINITION OF TERMS

## Statement of the Problem

What sources of communication lead the public to telephone the Cancer Information Service (CIS) in Washington, D.C., and how do blacks differ from whites in the utilization of the service?

## Purpose of the Study

Specifically, the study was conducted to

1. Determine the most common information sources relative to the number of telephone calls received by the Washington, D.C. CIS;

2. Distinguish the demographic characteristics of the callers;

3. Delineate specific differences in the utilization of the service between blacks and whites;

4. Identify the various indicators of CIS utilization by the diverse elements of the population; and

5. Formulate generalizations, draw conclusions, and offer recommendations to former officials of the

Washington, D.C. CIS that might improve the service if they regain funding.

## Definition of Terms

Cancer--A group of diseases that affect different parts of the body through the uncontrolled growth and spread of abnormal cells.

Carcinogen--Any substance that causes cancer either in animals or humans.

Credibility--The believability members of an audience hold toward a source of information.

Health promotion--A deliberate effort to improve the quality of health among members of a society.

Neoplasms--Abnormal cells that grow into tumors.

Social Marketing--The application of advertising techniques to promote social service programs rather than commodities.

Target group--The intended audience of a specific health care screening or information campaign.

Washington, D.C.--The metropolitan area includes the Maryland suburbs of Prince Georges, Charles, and Montgomery Counties, and the Virginia suburbs of Arlington, Fairfax, Loudoun, Prince William Counties, and the cities of Alexandria, Fairfax City, Falls Church, Manassas, and Manassas Park.

## Organization of the Remainder of the Thesis

The remainder of the thesis has been organized as follows:

Chapter III will provide the theoretical as well as methodological considerations involved in the execution of the study.

Chapter IV will report the findings of the study, while Chapter V will offer a set of generalizations and recommendations.

In addition, the thesis will have a comprehensive bibliography and appendices.

## CHAPTER III

## THE THEORETICAL AND METHODOLOGICAL CONSIDERATIONS FOR THE STUDY

### Theoretical Considerations

Research findings have indicated that the most effective way to reach people with new ideas and persuade them to utilize innovations results from a combination of mass media and interpersonal communication channels.[117] During the past 40 years, findings from communication research disclosed that events and an audience's characteristics interact to either strengthen or diminish effects on knowledge, attitudes, and behavior.[118] Another group of researchers concluded that impact from promotional campaigns only lasts for short periods of time, regardless of the mode of promotion.[119] An evaluation of various communication sources in the analysis of this project should reveal how well communication theory applies to health care.

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[117]Everett M. Rogers and F. Floyd Shoemaker, Communication of Innovations: A Cross-Cultural Approach, 2d ed. (New York: The Free Press, 1971), p. 260.

[118]Butler and Paisley, "Communicating Cancer Control to the Public," pp. 8-9.

[119]Wilkinson, Mirand, and Graham, p. 256.

Communication research and basic psychological research suggest interpersonal factors predict the effectiveness of conveying information.[120] Studies have shown that the social and economic background of the audience will significantly influence the responses of an audience to a speaker and his or her message.[121] Generally, studies discovered that respondents tend to avoid responses that might offend the interviewer of a different race.[122] The effect holds for both white and black respondents.

School, church, family, work, peers, and other forms of socialization form an individual's first and continuing social connection. Logic dictates that communication between those of the same race or ethnic group would be more effective than communication between people of different races or ethnic groups. Sources regarded as credible for new knowledge may not be persuasive in attempts to change attitudes or behaviors.[123] Also, one audience may consider a source to lack credibility, while a different audience might identify the same source as highly credible.[124]

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[120]Butler and Paisley, p. 9.

[121]Michael Burgoon and Michael Ruffner, Human Communication (New York: Holt, Rinehart, and Winston, 1978), p. 70.

[122]Carl W. Downs, G. Paul Smey, and Ernest Martin, Professional Interviewing (New York: Harper & Row Publishers, 1980), p. 362.

[123]Butler and Paisley, p. 9.

[124]Ibid.

The media exert a lifelong socialization influence, especially the audiovisual media, demonstrating how members of an audience should react to an enormous variety of situations, including suspected illness and diagnosed illness.[125] One instance of the relationship between socialization and health care occurs in India. Small, organized groups of individuals meet regularly for a mass media program and discuss the program's contents.[126] The sessions, known as media forums, help a quarter million Indian peasants become aware of agricultural and health innovations through twice-weekly radio forums that involve group discussion after the broadcast.

Diffusion of new ideas involves communication through certain channels during a given time period, among members of a social system. Four essential elements in any analysis of the diffusion process of an idea involve innovation, communication between individuals, presence of a social system, and passage of time to permit change.[127] The social system is a population of individuals who engage in collective problem-solving behavior.[128] Innovativeness is the extent to which

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[125]Ibid. [126]Rogers and Shoemaker, p. 261.

[127]Everett M. Rogers, Diffusion of Innovations (New York: The Free Press, 1969), p. 19.

[128]Ibid., p. 20.

someone adopts an idea in comparison to other members of the same social system.

Adoption represents a highly advanced stage of communication that exists when a person decides to continue full use of an innovation.[129] The process of adoption involves first hearing about an innovation and proceeds until complete implementation. The adoption process consists of five stages: awareness, interest, evaluation, trial, and adoption itself.

The adoption process differs markedly from the diffusion process. Full implementation of a new idea by an individual would present an example of the adoption process, while the spread of new ideas in a social system represents the diffusion process.[130] Once an individual decides to continue an innovation, the adoption stage is reached.[131]

Before adoption takes place, the awareness stage occurs first, identifying an individual's exposure to an innovation. At this point, an individual lacks complete information about the innovation.[132] The interest stage arrives next as a person becomes curious about a new idea and seeks out additional information.[133] The evaluation stage follows at the point when a person mentally applies an

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[129]Ibid., p. 17.

[130]Ibid., p. 18.

[131]Ibid., p. 81.

[132]Ibid., p. 82.

[133]Ibid., p. 83.

innovation to himself and then decides whether or not to try it. At the trial stage, an individual begins to practice the innovation on a small scale. Total implementation of the innovation signifies the adoption stage.

In research studies, respondents who met the researchers' description of maximum knowledge suggested unusual patterns of media utilization between various demographic groups.[134] Schramm and Wade controlled for the effects of age, education, and sex, finding that persons with minimal knowledge of cancer and polio exhibited little difference, regardless of demographic group. The information those with little knowledge did acquire probably represented penetration from the mass media.[135] In the 1960s, Klapper argued that the mass media reinforced socially prevalent attitudes and behaviors initially created through the social network.[136]

In the early 1970s, researchers showed configurations of interacting factors from which different attitude and behavior effects might be predicted.[137] Although several studies addressed the relationship between knowledge and attitudes, Philip J. Tichenor and his colleagues conducted

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[134]Butler and Paisley, p. 8. [135]Ibid.

[136]Joseph T. Klapper, The Effects of Mass Communication (Glencoe, Ill.: The Free Press, 1960), p. 42.

[137]Butler and Paisley, p. 8.

research that determined the existence of ways to bridge the gulf.[138] The group of researchers posited that information or education programs usually stop at the point of first impact, often only reaching the better educated.[139] Tichenor discovered that a better chance exists to bring attitudes into line with knowledge when a program is extended over a longer period of time.

Interest in a topic among the audience also plays a role in communication of a message. One study found that poorly informed individuals with interest in a subject paid attention to media messages.[140] The same project revealed that those who were well informed, but not interested, paid little attention. Zimmerman and Bauer concluded that audiences remember message elements selectively, depending on an individual's interpretation of the interest and acceptability of information.

The findings from research studies may depend on whether the data were collected from a laboratory environment or out in the field. Hovland and his colleagues at Yale studied communicator, message, context, and audience variables under controlled conditions. Hovland uncovered

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[138]Philip J. Tichenor, George A. Donahue, and Clarice N. Olien, Community Conflict and the Free Press (Beverly Hills, Calif.: Sage Publications, 1980), p. 229.

[139]Ibid., p. 230.

[140]Butler and Paisley, p. 7.

personal and social factors, which greatly influence field studies but seem suppressed in the laboratory. Thus, comparisons between laboratory studies and field studies may offer limited value.

Human relationships may affect communication, too. Barnlund stated the study of interpersonal communication is concerned with the investigation of informal social situations, in which people sustain interaction through the reciprocal exchange of verbal and nonverbal cues in a face-to-face setting.[141] The importance of interpersonal communication was epitomized when word of mouth carried news of Ghandi's death to most of the Indian people.[142] When President John F. Kennedy was assassinated, nearly half the people heard the news first by word of mouth.[143] Among other examples, the rock festival at Woodstock, New Jersey, and the political demonstrations of the 1960s that drew a hundred thousand young people or more indicate the influence of word-of-mouth communication.[144]

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[141]Reed H. Blake and Irwin O. Haroldsen, A Taxonomy of Concepts in Communication (New York: Hastings House Publishers, Inc., 1975), p. 27.

[142]Wilbur Schramm, Men, Messages, and Media: A Look at Human Communication (New York: Harper & Row, Publishers, Inc., 1973), p. 133.

[143]Ibid., pp. 133-34.

[144]Ibid., p. 134.

The two-step flow hypothesis of communication originated from Paul Lazerfeld and some of his colleagues from Columbia University. The researchers defined two-step communication as the flow from the mass media to opinion leaders and from these to the less-active sections of the population. The two-step flow theory set in motion a number of studies of audience behavior, especially in relation to campaigns and to the media.[145]

Despite the value of the two-step theory, it failed to fully explain the communication process. Menzel and Katz studied diffusion of a new drug among physicians in four cities, expanding the two-step theory to a more sophisticated multi-step communication process that involves a social network.[146] In some cases, only one step may exist. For example, a great amount of information flows directly from the media to a receptive person without the presence of a middleman.[147] In addition, the concept of a society divided into opinion leaders and followers never held up.[148] No convincing evidence emerged to prove that opinion leaders are typically active forces in social persuasion. Rogers identified opinion leadership as a continuous variable. A two-step flow, beginning with media, moving to leader, and stopping with the follower, fails to recognize that

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[145]Ibid., p. 121.

[146]Butler and Paisley, p. 7.

[147]Schramm, p. 122.

[148]Ibid., p. 123.

information moves continuously through a social system and follows the constraints and needs within the system.[149] Thus there is a multi-step flow of information in a social milieu.

The bullet theory joined the two-step flow theory as a communication term with its best days buried in the past. Harold Lasswell analyzed the effect of propaganda, suggesting messages from the media would prove "irresistible" to the public.[150] The bullet theory of communication became associated with the potential for widespread behavior modification many linked with propaganda. The transference of ideas was seen as caused by a magic bullet. After review, scholars found that the audience, when hit by the bullet, refused to fall over. In one experiment, prejudiced people were fed anti-prejudice propaganda, and they actually used it to reinforce their existing prejudices. Festinger's theory of cognitive dissonance describes a different situation that results when an individual finds difficulty in dismissing a different point of view that is an attractive alternative but contrary to his own previous belief.[151] The viewpoint that the mass media could dominate the public eroded in the 1940s

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[149]Ibid., pp. 124-25.

[150]Wilbur Schramm and Donald Roberts, The Process and Effects of Mass Communication (Urbana, Ill.: University of Illinois Press, 1971), p. 8.

[151]Leon Festinger, Conflict, Decision, and Dissonance (Stanford, Calif.: Stanford University Press, 1964), p. 99.

and 1950s when severe limitations were found with the influence wielded by the mass media.[152]

Besides the message itself, a number of factors can affect the quality of communication. The credibility of a communicator, appeal of a message, audience readiness to respond, or ease of response all need evaluation.[153] For example, the Kate Smith war bond marathon elicited patriotic sentiments and $39 million in pledges during World War I.[154] Merton first analyzed data from the bond drive and regarded the campaign as a rousing success. Raymond Bauer later conducted his own investigation and concluded that Kate Smith at most persuaded 4 percent of her audience to buy bonds and more likely convinced only 2 percent to invest.[155]

Another study indicated that physicians tend to seek advice from professionals rather than commercial sources, such as drug-company salesmen. When the seriousness of a disease increases, physicians rely on the recommendations of other professionals more than ever.[156] A study about the adoption of specific drugs to treat certain diseases was

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[152]Daniel Lerner and Lyle M. Nelson, Communication Research--A Half-Century Appraisal (Honolulu: East-West Center Publishers, University Press of Hawaii, 1977), p. 223.

[153]Butler and Paisley, p. 6.

[154]Schramm and Roberts, p. 334. [155]Ibid., p. 334.

[156]Ibid., p. 340.

conducted by Coleman, Menzel, and Katz. The three researchers found physicians exhibit great caution in the information sources they trust to assess the efficacy of new drugs.[157]

An additional determinant of an individual's reaction to a given situation involves his or her mental set. Murray defined mental set as the emotions, moods, personalities, and temperaments of people that determine the perception of external stimuli.[158] A person who seeks constant reassurance may view events differently than someone else who possesses less need for security. For instance, Wever and Zener showed that when people are required to judge the weight of objects as light or heavy, the other objects in the same series will affect the person's judgment.[159] Sears and Freedman conducted studies that suggested when a person received exposure to biased or one-sided information, the same individual later preferred information that favored the opposite position.[160]

Theories even stretch to cover how science writers should be trained. The question of how to train science writers moved to the forefront in 1964 when James Stokley, chairman of the professional training committee of the National Association of Science Writers (NASW), proposed

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[157]Ibid. [158]Ibid., p. 248.

[159]Ibid., p. 256. [160]Ibid., p. 231.

an education program heavily oriented toward science courses.[161] A forceful objection from a former NASW president criticized Stokley and claimed the training committee lacked scientific data to back its conclusions.[162] The critic apparently overlooked a statistical survey of 72 science writers conducted by William E. Small, with the results published in the NASW Newsletter of December 1963. Small, studying for a M.A. under Stokley at the Michigan State University School of Journalism, discovered that the average science writer was a 24-year veteran in journalism with 14 years in science writing.[163]

Respondents to Small's survey recommended several areas of competence, with medicine topping all other subjects. Next in importance: biology, psychology, chemistry, astronomy, physics, and space technology.[164] Writers indicated they most frequently covered medicine. The next most common story topics, in order of frequency: biology, chemistry, physics, psychology, astronomy, space technology, and chemistry. The science writer must know the characteristics of his audience, how much the public

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[161]David Warren Burkett, Writing Science News for the Mass Media (Houston: Gulf Publishing Co., 1973), pp. 59-60.

[162]Ibid., p. 60.

[163]Ibid., pp. 60-61.

[164]Ibid., p. 61.

understands and wants to know about science, and how he can transmit his information most effectively.[165]

A Nobel Prize winner claimed nearly 50 years ago that science writers "live on the crumbs" of researchers. In response, then New York Times science editor William L. Laurence replied, "Unfortunately it is a hard life because the crumbs are so often stale."[166] All except a few scientists--largely in the autocratic domains of the medical schools--now realize more than ever how the progress of science depends on an understanding public.[167] In an attempt to bridge the void between scientists and science writers and their respective levels of knowledge, greater educational training about science for the journalists may help them earn extra respect from the scientific community.

A further attempt to determine how best to prepare science writers to meet the information needs of the public occurred in the 1970s. Michael Ryan and Sharon Dunwoody surveyed science writers and discovered that English and journalism represented the most popular undergraduate majors.[168] Ryan and Dunwoody agreed with Small's conclusion

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[165]Earl Ubell, "Science in the Press: Newspapers vs. Magazines," Journalism Quarterly 40 (Summer 1963): 293.

[166]Ibid. [167]Ibid.

[168]Michael Ryan and Sharon L. Dunwoody, "Academic and Professional Training Patterns of Science Writers," Journalism Quarterly 52 (Summer 1975): 246.

that biology, physics, chemistry, and psychology were studied by large percentages of science writers.[169] Another researcher, Lee Johnson, found that science writers take courses in the physical and social sciences (pre-medical and public health courses were most frequently recommended). In addition, Johnson, Small, and Ryan and Dunwoody learned that mathematics was recommended for potential science writers.[170] Small and Ryan and Dunwoody also discovered that astronomy, biology, chemistry, and physics were highly recommended by science writers.

More recent studies have discovered that disagreement persists among science journalists themselves about whether generalists with strong basic writing techniques or highly trained specialists should handle science coverage, according to a 1983 study conducted by Conrad Storad as a follow-up to similar conclusions of Everette E. Dennis and James McCartney in a 1978 study. Despite the absence of a consensus, respondents to the Storad study revealed science reporting is "entrusted to experienced, well-educated reporters, many with special credentials and strong backgrounds in science." The Storad study also found that science writers seemed somewhat critical of editors and newspaper management, pleading for

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[169]Ibid., p. 240.

[170]Ibid., p. 246.

more time, more space, more resources, and a greater understanding and appreciation of the material.[171]

The weight of theoretical evidence indicated that a combination of mass media and interpersonal communication channels tailored to attract specific demographic groups represents the best approach to reach those who could gain the most from the Cancer Information Service. Diffusion of new ideas requires communication during an extended period among members of a social system. Four essential elements to spread ideas through the diffusion process are innovation, communication between individuals, presence of a social system, and the passage of time. The adoption process, which consists of complete implementation of an idea, begins with awareness and includes interest, evaluation, trial, and finally adoption.

The communication process occurs as information flows through steps. The number of steps in the process has sparked considerable debate throughout the years, with the multi-step theory developed by Menzel gaining current acceptance. He determined that information moves continuously within a social system, poking holes in the previously popular but overly simple two-step theory of Paul

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[171]Conrad J. Storad, "A Survey of Science Journalists Working for Major American Metropolitan Daily Newspapers: Who They Are, How They Work, and Their Perceptions of Science Journalism in 1983" (applied project for a master's degree, Arizona State University, December 1983), pp. 43-44.

Lazerfeld and the bullet theory of Harold Lasswell. Other factors that affect the quality of communication include the credibility of the communicator, appeal of the message, and audience receptiveness.

## Background Assumptions

The foregoing theoretical discussion led to the formulation of the following five basic assumptions for the study:

First, it was assumed that selected groups, interpersonal communications, and the mass media may influence people to use the Cancer Information Service in Washington, D.C.

Second, it was further assumed that blacks rely more heavily on television about the Cancer Information Service in Washington, D.C. than any other source.

Third, the first source to communicate the existence of the CIS in Washington, D.C. was assumed to exert the influence needed to produce a telephone call to the CIS from an individual.

Fourth, it was assumed that the most significant communication of cancer information in the Washington, D.C. area occurred through the public-information activities of the Washington, D.C. CIS office.

Fifth, the messages people received about the CIS in Washington, D.C. were assumed to be essentially positive, encouraging them to eventually contact the service.

## Methodological Considerations

The study utilized the techniques of survey research. The justification for utilization of the survey research technique is based on the experiences of several noted researchers in the health care field. The greatest number, and possibly the poorest, of health survey projects has occurred in connection with the measurement of public knowledge and information in the health care field.[172] An analysis of health education research that appeared in Research Quarterly between 1951 and 1960 revealed that three out of four health care studies involved survey research projects with either flawed designs or improper execution.[173] In general, public health education research failed to implement current concepts and methods in public opinion and communications research. Among the shortcomings: unrepresentative samples, poorly constructed questionnaires, unskilled interviewing, and inadequate analysis. Bungled public health studies represent the rule rather than the exception.

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[172]Charles Glock, Survey Research in the Social Sciences (New York: Russell Sage Foundation, 1967), p. 469.

[173]Ibid., p. 470.

Despite the drawbacks from the past, survey research has achieved an established place in nearly all aspects of health and medical research.[174] Numerous ways exist to apply survey research techniques adeptly and to promote public health education.[175] Examples include:

1. planning, conducting, and evaluating health education programs;

2. gathering information for volunteer health groups in educational campaigns;

3. determining the usefulness of materials published by health agencies;

4. obtaining public support for health programs;

5. collecting information essential to the understanding of the health needs of a community; and

6. ascertaining knowledge of available health facilities.[176]

Survey research offers great social, scientific, and educational potential.[177] George Gallup and Elmo Roper popularized surveys. The two public opinion kingpins collected data from national samples for studies, which were

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[174]Ibid., p. 434. [175]Ibid., p. 470.

[176]Ibid., p. 470.

[177]Earl Babbie, Survey Research Methods (Belmont, Calif.: Wadsworth Publishing Co., 1973), p. 372.

essentially descriptive research.[178] The techniques of surveying progressed during the past few decades, affirming the value of survey research. Notable contributions in the field of survey research include a study conducted by the Edinburgh Public Health Department to analyze the effectiveness of a large-scale health education campaign.[179] The Edinburgh project was intended to inform the public of risks of lung cancer associated with cigarette smoking but failed to produce positive results. Another survey research endeavor examined a Canadian community that attempted to communicate mental health information and measure attitudes. The campaign not only was devoid of success, it increased anxiety among community members. These represent only two examples of the relevance survey research exerts in the health care field.

Survey research has probably attracted more interest in the health area than any other field.[180] While some organizations employ well-trained staffs, many projects are conducted by comparative amateurs. There is little communication across disciplines, and creative innovations from one field tend not to be known in another.[181] As a result, questionnaire construction may lack good structure.

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[178]Glock, p. xv.

[179]Ibid., p. 470.

[180]Ibid., p. 501.

[181]Ibid., p. xi.

A model questionnaire consists of four parts: the introduction, warm-up questions, the body of the study, and demographic questions.[182]

The wording of questionnaires must be concise, to the point, and easy to grasp.[183] Lengthy questions create difficulties for the respondent because he must listen to a discourse that may overburden his level of comprehension and drain his patience. Embarrassing questions, such as an inquiry about someone's income, could cause a respondent to squirm and pressure him to give an untruthful answer.[184] For example, the introduction of a questionnaire should be nonthreatening, brief, and realistically worded. Warm-up questions prepare a respondent for the probing "heart of the study" queries.[185] Questions about a respondent's residence could serve as a useful device to launch an interview because they are specific, nonthreatening, and relevant to the information needed for an analysis. Questions within the "heart of the survey" section tackle serious topics of importance to the study. Demographic information remains fair game for researchers to seek during surveys. Questions

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[182]Backstrom, p. 92.

[183]Ibid., p. 91.

[184]Ibid., p. 90.

[185]Ibid., p. 92.

about a person's age, income, religion, and political affiliation are not taboo.[186]

This study adopted the recommendations, saving the sensitive demographic questions for the end of the interview. The brevity of CIS-related questions followed the suggestion not to overburden respondents and drain their patience. The dichotomous and multiple-choice questions also allowed data processers at the NIH to code the information more easily. The analysis of survey results necessitated electronic data-processing equipment for rapid cumulation and association of the data.[187] Machine tabulations generated exact rapid counts on responses, which the NIH facilitated. Key-punched data cards, which have become a universal shorthand for communicating volumes of data, were produced by a professional firm that handles other NIH survey research projects.

Numerous survey research techniques implemented in this study protected the quality of the data. The abundance of respondents who contacted the CIS in Washington, D.C. actually helped to ensure a sufficient number of callers to permit an analysis of specific demographic groups.[188] The availability of respondents also diminished the possibility of "armchair interviewing" that may lure a professional interviewer to fill out the surveys himself, biasing data.

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[186]Ibid., p. 97.

[187]Ibid., p. 16.

[188]Ibid., p. 12.

The decision of this researcher to gain access to data from a survey project that possessed federal funding helped yield multiple advantages.

Expenditures in a field survey include supervision of the project director, training of the interviewers, verification and coding of questionnaires, mechanical and electronic data processing, and secretarial and clerical services.[189] The NCI sponsorship of the CIS in Washington, D.C. provided money to staff the Howard University site, pay for qualified survey supervisors, train interviewers, gain the services of professional questionnaire coders at the National Institutes of Health, and benefit from the availability of mechanical and electronic data processing. In addition, Shirley Charles, who holds the greatest responsibility for conducting the interviews for the survey at the CIS in Washington, D.C., ranked at the top in comparison to nearly two dozen other interviewers at CIS offices around the country as she earned close to a perfect score in a test call designed to evaluate telephone personnel. Women, especially mature women, present little threat to respondents and stimulate an almost automatic interest from men.[190]

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[189]Ibid., p. 14.

[190]Ibid., p. 12.

The omission of a demographic question about income may have protected this survey from a possible flaw. If some respondents object to the question and refuse to answer, incomplete responses from individuals who represent a population could introduce a strong possibility of biased results.[191] Pre-testing a survey on a small group of people helps determine whether questions contain proper wording and promote clarity.[192] Accordingly, this study included a pre-test at the NIH that involved the Washington, D.C. office.

Questions with an exact meaning are easier for respondents to grasp and answer correctly than incomplete, imprecise, or indefinite questions.[193] Structural questions present the respondent with fixed response choices that allow pre-coding.[194] Two types of structured questions exist. Dichotomous questions elicit either one response or one other, such as a yes or no answer. Multiple-choice questions involve more than two fixed alternatives. The drawback with both dichotomous and multiple-choice questions rests with an inability to determine a respondent's intensity with either type of question. One solution is to use scaled responses with different psychological weights (i.e., very agreeable,

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[191]Glock, p. 460.

[192]Backstrom, p. 15.

[193]Ibid., p. 84.

[194]Ibid., p. 76.

agreeable, neutral, disagreeable, very disagreeable) to help alleviate the problem.[195]

This research project steered clear of open-ended questions to avoid numerous drawbacks. Despite the advantage of discovering elements of a respondent's opinion that a researcher may not think to test when he develops a questionnaire, open-ended questions tax both a respondent and an interviewer with unwieldy and time-consuming queries.[196] The analysis of open-ended questions can cause agonizing problems with coding the free-form answers. In addition, a researcher may classify the data from open-ended questions differently than the respondents, if they were given the coding task. Also, reliance on responses to an open-ended question of a general nature may not elicit specific data necessary for the analysis.[197]

The true value of a survey research endeavor surfaces when the research design meets the objectives of the project. In this survey, the population under examination consisted of all individuals who called the CIS for cancer-related information. The uniqueness of the CIS, which involves contact that respondents initiate, permitted telephone counselors to ask callers about demographic information

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[195]Ibid., p. 75.

[196]Ibid., p. 73.

[197]Ibid., p. 75.

and the source that first led to the call without sparking alienation and refusal of the respondents to participate. As a result, this project queried 4,736 callers, nearly every member of the population that contacted the CIS in Washington, D.C. for information about cancer. The mechanics of drawing a sample of the population would have required calculation of tolerable error, sample size, and confidence levels before implementing data-collection procedures.[198]

The processing and compilation of data were conducted at the NIH computing center. The participation of highly skilled NIH data processers should minimize any mechanical errors or clerical errors that may crop up. Mechanical and clerical errors affect surveys that select a sample of respondents and surveys that reach an entire population.[199]

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[198]Ibid., p. 63. [199]Ibid., p. 28.

# CHAPTER IV

## FINDINGS OF THE STUDY

Findings of the study have been reported here under the following sections or rubrics: (1) the most common information sources relative to the number of telephone calls received by the Washington, D.C. Cancer Information Service (CIS); (2) the demographic characteristics of the callers; (3) delineation of specific differences in the utilization of the CIS between blacks and whites; and (4) the identification of the various indicators of utilization of CIS by the diverse elements of the population in the Washington, D.C. area.

The formulation of certain generalizations and conclusions from the study will be offered in Chapter V.

### The Most Common Information Sources

The findings of the study indicate that television is by far the single most common first source of information about the CIS in Washington, D.C. among the 4,736 callers, analyzing utilization between January 1983 and August 1984. The findings reveal that 37 percent (N = 1,752) of the respondents ranked television as the medium where they first

heard about the CIS. Radio finished second, attracting 19.6 percent (N = 926) of the respondents. The telephone book was used by 13.3 percent (N = 628) of the respondents to call the CIS. In fourth position, pamphlets provided 8.4 percent (N = 397) of the callers with their first knowledge of the service. Friends informed 4.0 percent (N = 188) of the callers about the CIS. The rankings of other sources of information fell below 4 percent.

One reason for the phenomenal success of television to spark calls to the CIS stems from the intensive efforts of Les Butler, then CIS communications director, to gain air time for public service announcements (PSAs) on Washington, D.C. television stations. When contacted to explain the dramatic number of calls the PSAs produced, Butler revealed that he received requests from the local network affiliates in Washington, D.C. to smooth over sensitive situations between the stations and the black community. As a reward for his efforts at mediating and resolving conflicts, Butler gained enviable access to station executives.

When one D.C. station aired a PSA for the CIS, Butler said rival stations balked at giving up their own PSA time for a CIS announcement, arguing that CIS promotional needs had been served. But the situation was nothing Butler could not overcome. Butler, who formerly served in a public affairs capacity at WJLA-TV, the Washington, D.C. affiliate

for the American Broadcasting Company (ABC), understood the needs of the stations and offered to produce a new PSA and give exclusive broadcast rights to one of the recalcitrant stations. Thus, CIS announcements flashed across metropolitan Washington, D.C. television sets from several channels, communicating the existence of the CIS to a great number of viewers.

Many of the same techniques that Butler exercised with television executives were applied to radio station public service directors with almost as much success. For example, Butler targeted one CIS campaign to reach the 50 and older age group at stations that catered to these listeners, offering a PSA that specifically addressed the health concerns of the stations' listeners. The appeal of radio stations to certain segments of the population provides an opportunity to appeal directly to a demographic group that underutilizes the CIS.

## The Demographic Characteristics of the Respondents

### Residence

The geographic location of CIS callers included the District of Columbia and two bordering states, Maryland and Virginia. A total of 4,736 respondents called the CIS, and 32.9 percent of them indicated Maryland as home. Nearly as many, 32.1 percent, identified the District of Columbia as

their place of residence. Virginia was mentioned as home for 27.4 percent of the callers. A sizable number of callers, 360 out of 4,736, failed to reveal their place of residence.

Sex

Consistent with national findings of CIS utilization, more women than men called the Washington, D.C. CIS. Out of 4,736 callers, 2,799 of them identified themselves as women, accounting for 59.1 percent of the calls. In comparison, 1,926 men called the CIS, totaling 40.7 percent of the calls.

The first reaction about the findings is that Washington, D.C. black men exhibit the highest rate of many kinds of cancer in comparison to other major U.S. cities, but male residents of the District still called the service less than women. A closer analysis of the utilization revealed a ratio of three calls from women for every two calls from men. The 3:2 ratio indicated a disproportionately low rate of utilization among men, but interestingly the ratio was less extreme than on the national level. The findings suggest that the CIS in Washington, D.C. experienced difficulty in attracting male callers, but the local CIS generated a higher percentage of calls from men than the national average that combines all CIS offices.

Age

The highest percentage of callers described their age as 50 or older. The age group that contained respondents between ages 50 and 59 totaled 17.7 percent, representing 839 out of 4,936 calls. The oldest group, age 60 and beyond, collected 764 out of 4,736 calls, registering 16.1 percent. The group to produce the third highest call volume consisted of respondents between the ages of 30 and 39, generating 570 out of 4,736 calls for 12.0 percent of the total. The fourth-ranking age group contained callers between ages 40 and 49, leading to 537 out of 4,736 calls or 11.3 percent. The respondents between ages 20 and 29 generated 304 out of 4,736 calls, accumulating 6.4 percent of the total. The youngest age group, 19 and under, accounted for 74 out of 4,736 calls, barely reaching 1.6 percent.

Almost one-third of the respondents, 1,566 out of 4,736 callers, were not asked about their age. Another 51 callers or 1.1 percent of the total would not give their age. Less than 1.0 percent of the respondents either had called the CIS before, 27 callers, and thus were excluded from the study, or the education category was blank when the questionnaires were coded.

In some instances, compassion took priority over completion of the questionnaires. Despite the large number of callers who were not asked about their age, a telephone

counselor needed to weigh the costs and benefits of querying a distressed caller to elicit demographic information. This survey relied on the judgment of the counselors to recognize when to press forward with demographic questions and the times when a counselor should simply reassure a caller and say good-bye. If a researcher has faith in the training and discretion of the counselors to respond appropriately, no need exists to find fault with their decisions.

Among callers who answered the demographic questions, the finding that respondents age 50 and beyond generated more calls than any other group could have been predicted. The NCI devised a promotional campaign to inundate those age 50 and older, a high-risk group to develop cancer, with announcements about the availability of the CIS. The success of Les Butler in gaining PSA air time at television and radio stations for the "50 plus" messages should explain the popularity of the CIS among older callers. The findings prove the "50 plus" campaign in Washington, D.C. was a resounding success.

Education

In an analysis of responses from callers who identified their level of education, college graduates placed the largest number of calls. Those with a college degree, but no postgraduate training, accounted for 994 out of 4,736 calls or 21 percent of the total. The next highest number of

calls, 676 out of 4,736 or 14.3 percent, was registered among callers who had attended college without earning a degree. High school graduates who never attended college generated 620 calls or 13.1 percent, ranking third. Callers with postgraduate training initiated 489 calls or 10.3 percent, finishing fourth. Just under 3 percent of the callers possessed less education than a high school degree. Those with some high school, but more than a grade school education, totaled 93 callers or 2.0 percent of the respondents. Only 31 respondents or 0.7 percent had no more than a grade school education.

Out of 4,736 callers, 2,938 of them or 62.0 percent indicated an educational level. Among the remaining callers, 1,687 of them or 35.6 percent were not asked about their level of education, and 107 others or 2.3 percent gave no information. The questionnaires of 35 callers or 0.7 percent were found with the education category left blank, and four callers had previously used the CIS.

The findings revealed a deficiency in the communication of cancer information to the least-educated residents of metropolitan Washington, D.C. The results suggest a need for new programs to bridge the gap that keeps individuals with little education away from the mainstream of cancer information. Another concern is that those with the least education may already possess a lower level of knowledge about good

health care habits than their better-educated counterparts, creating even more of an urgency to communicate information about cancer symptoms to them.

Race

Whites dominated the CIS utilization, generating 2,149 out of 4,736 calls or 45.4 percent. Blacks accounted for 849 out of 4,736 calls or 17.9 percent of the total. Additionally, 1,573 out of 4,736 callers or 33 percent of them were not asked to disclose their race. Another 57 callers or 1.2 percent failed to release information about their race. No other ethnic group or alternative response to the question registered more than a fraction of 1 percent of the calls.

The high utilization of the CIS among whites suggested a successful promotional campaign to reach this group with cancer information, but the discovery that fewer than 28 percent of the CIS callers were black exposed a possible weakness in the promotional system. The high cancer risk among blacks demonstrated a significant challenge to reach these individuals with cancer information, which could bring blacks into the health care delivery system earlier and help save lives. The absence of even 1 percent of the calls to come from either Hispanics (N = 32) or Asians (N = 44) revealed an additional area where improvement seems

warranted. The lack of a high-powered promotional campaign to attract Hispanics or Asians to call the CIS may explain part of the underutilization.

## The Delineation of Specific Differences in the Utilization of the CIS Between Blacks and Whites

An evaluation of utilization differences between blacks and whites revealed that blacks are responsible for television leading all other sources as the first way that callers learned about the CIS. Television ranked first among blacks but took the runner-up position with whites as radio finished at the top. Radio barely led television as the number-one source of learning about the CIS among white callers. Less than one percentage point separated the two sources as radio sparked 30.1 percent of the calls and television led to 29.3 percent. The telephone book and pamphlets each assisted 10.0 percent of the callers with information about the service. More than five percentage points below, magazines accounted for 4.8 percent. Other researchers have found whites watch less television and read more than blacks. The dominance of television as the first source about the CIS among blacks supports the results from previous research projects.

Slightly under half the black respondents revealed television led them to call the CIS. Out of 847 black respondents, 421 of them or 49.7 percent identified

television as their first source of learning about the CIS. Radio encouraged 17.2 percent (N = 146) to call the service. The telephone book ranked third among blacks, as well as among whites, generating 7.9 percent (N = 67) of the calls. Friends leaped into the top five among blacks with 5.1 percent (N = 43), finishing fourth. In comparison, the same source ranked sixth among whites. In fifth position, pamphlets accounted for 4.1 percent (N = 35) of the calls, falling short of the 10.0 percent and fourth position among white callers. The other sources of information drew less than 4.0 percent of the callers. Significantly, the fifth most frequently mentioned source among whites, magazines, ranked eighth among blacks and only managed to attract 1.7 percent of the callers. The finding correlates with the conclusions of other researchers that whites read more than blacks.

Only 44 Asian respondents among 4,736 callers prevented a statistically significant total for any racial categories except whites and blacks. Even so, 16 out of 44 Asian callers or 36.4 percent indicated television provided the first source of learning about the CIS. As further proof of the great influence of television, 15 out of 32 or 46.9 percent of Hispanic callers identified television as the first source of information about the service.

Several factors could explain the high rate of success for CIS promotional campaigns on television to reach blacks. One, former CIS official Les Butler, as described earlier, enjoyed great success in gaining air time for PSAs. Two, among the celebrities who appeared in CIS announcements was Carl Rowan, a black syndicated columnist for The Washington Post who likely encouraged a considerable number of blacks to call the service. Three, blacks, in general, probably watched more television than whites.

## The Indicators of Utilization of CIS

### Sex

Sex of the respondents appeared to be a reliable indicator of specific sources of information about the CIS in Washington, D.C. The analysis of data on how male (N = 1,926) and female (N = 2,799) callers first heard about the CIS indicated that television exerted the chief influence among both groups. Television informed males about the CIS before any other source in 40.1 percent of the cases. It ranked well above radio, which 26.6 percent of the men mentioned as the first source. The telephone book finished as the third most frequent source among men, totaling 9.2 percent. The survey revealed that 5.6 percent of men named pamphlets as the first source of learning about the CIS. Recommendations from friends led to CIS calls from 3.4 percent, taking the fifth spot.

Among women, 34.6 percent identified television as the first source to communicate the existence of the CIS. The telephone book served as the second most often mentioned source, compiling 16.1 percent. Radio held third position, attracting 14.6 percent of the women to the CIS. Pamphlets ranked as the fourth most popular source, accumulating 10.3 percent of the sample. Health professionals other than physicians were identified as the first source to communicate the existence of the CIS for 4.5 percent of the women. It finished fifth, just ahead of the 4.4 percent who first heard about the CIS through a friend.

Residence

The geographic location of CIS callers included the District of Columbia and two bordering states, Maryland and Virginia. A total of 4,736 respondents called the CIS, and 32.9 percent of them (N = 1,559) indicated Maryland as home. Nearly as many, 32.1 percent (N = 1,521), identified the District of Columbia as their place of residence. Virginia was mentioned as home for 27.4 percent of the callers (N = 1,296). A sizable number of callers, 360 out of 4,736, failed to reveal their place of residence.

Television ranked as the top source to communicate the CIS in Maryland, the District of Columbia, and Virginia. In fact, the top five sources of learning about the CIS in

all three areas matched up exactly. Radio ranked second. The telephone book and pamphlets finished third and fourth, respectively. Friends took fifth position in each geographic area.

Maryland residents who reached the CIS first learned about the service through television in 36.8 percent of the cases. More than 15 percentage points below television, radio led to 21.0 percent of the calls from Maryland. The telephone book provided the first source of learning about the CIS for 11.9 percent of the callers. Pamphlets generated 8.9 percent and friends contributed 3.8 percent.

The District of Columbia seemed dependent on television to communicate the existence of the CIS, topping 40 percent. Neither Maryland nor Virginia finished within 5 percent of the District, which reached 41.9 percent. Radio led to 18.9 percent, and the telephone book ranked third with 11.2 percent. Pamphlets and friends accounted for 6.0 percent and 4.7 percent of the calls, respectively.

In Virginia, television provided the first source of learning about the CIS for 36.6 percent of the callers. Radio led to 23.1 percent of the calls, reaching a higher percentage than in either Maryland or the District of Columbia. The telephone book facilitated 13.3 percent of the CIS calls. Pamphlets hit 9.0 percent and friends trailed with 3.4 percent.

Age

An analysis of respondents who answered questions about how they first heard about the CIS indicated that television ranked as the number-one source for all age groups, except the 60 and over category. Radio usually ranked as the second most often identified source for attracting callers to the CIS, but it tied for fifth position among the 19 and under age group (N = 74). Any expectations that radio might exert considerable influence among young people because of their tendency to listen to rock music stations proved unfounded in regard to the CIS. Television closely matched its usual appeal with the youngest group, reaching 37.8 percent. The telephone book turned 18.9 percent of callers aged 19 and under to the CIS, ranking second. Just under 10 percent of the youths indicated that pamphlets served as their first source of learning about the CIS. Out of 74 respondents, 9.5 percent or 7 of them described pamphlets as their first link with the service. That result matched the 7 out of 74 respondents, 9.5 percent, who identified friends as their first source of learning about the CIS. After the tie between pamphlets and friends for third position followed another tie. Radio and health professionals other than physicians each reached 5.4 percent of the youths.

The next category included individuals between the ages of 20 and 29 (N = 304). Television achieved its largest share of the callers for any age group, topping 40 percent. In this category, 41.4 percent of CIS callers mentioned television as the number-one source. Friends took the second position, generating 10.9 percent of the calls. The telephone book attracted just under 10 percent of the calls, finishing third with 9.9 percent. Radio and pamphlets each recorded 8.9 percent, tying in fourth position. The fifth-place finish for radio among the 19 and under category and the fourth-place tie in the age group between 20 and 29 seemed contrary to expectations, based on the relatively large number of young persons who probably listen to the radio. It suggested that PSAs about the CIS may not receive much air time on radio stations that attract a youthful audience.

Among the respondents between ages 30 and 39 (N = 570), radio gained one position, ranking third with 13.9 percent of the callers. Television once again led the way, gathering 30.0 percent of users in this category. It marks more than an 11 percent drop from the callers between the ages of 20 and 29 who cited television as the first source of learning about the CIS. Sandwiched inside television and radio, the telephone book assisted 14.6 percent of persons in this category and finished in second position. Pamphlets

repeated the fourth-place finish among the category for those between the ages of 20 and 29. Among persons between ages 30 and 39, 11.4 percent identified pamphlets as the first source of learning about the CIS. In fifth spot, friends inspired 5.3 percent to try the service.

Radio continued an upward trend when it generated 16.9 percent of the callers between ages 40 and 49 (N = 537), ranking second. Once again, television dominated as the first source of learning for CIS callers, collecting 32.0 percent. Pamphlets moved up one place from the previous category, finishing third with 13.0 percent. In fourth position, the telephone book generated 12.7 percent of the callers. Magazines jumped into the list of top sources that led to CIS calls, encouraging 5.8 percent of the respondents to try the service.

Radio doubled the number of callers it attracted among the category for those between ages 50 and 59 (N = 839), based on a comparison of callers from the age group 40-49. Television ranked as the first source of learning about the CIS in 39.1 percent of the cases. Nearly as many respondents, 36.8 percent, indicated that they first heard about the CIS through radio--a substantial jump relative to younger age categories. The third most frequently cited first source involved a tie between pamphlets and the telephone book, each gathering 5.6 percent. Magazines provided

the first source of learning about the service to 2.6 percent of the callers.

The category for callers who reached age 60 or older (N = 764) revealed that radio topped television as the first source to communicate the CIS to the callers. An average of slightly more than 4 out of every 10 respondents in this age group identified radio as the first source of learning about the CIS. Radio accumulated 40.1 percent and television collected 35.1 percent. A drastic drop occurred before pamphlets finished third, collecting 6.4 percent. The telephone book led 5.0 percent of the respondents to call the CIS, ranking fourth. Magazines captured the attention of 4.5 percent of the callers.

Education

Television generated the highest percentage of CIS calls among persons who either never reached college or never finished it. In contrast, radio ranked as the source with the highest percentage of callers among college graduates and those with postgraduate training. Only 31 out of 2,938 callers who indicated how they first learned about the CIS attained no higher than a grade school education. The low number of CIS callers with that amount of education prevented attaining statistical significance among this group. As expected, television took the lion's share of the total, attracting 38.7 percent to call the CIS, collecting 12 out

of the 31 respondents. The telephone book trailed, with 25.8 percent or 8 out of 31. No other medium led to more than three calls among persons with no more than a grade school education.

The next highest rung on the educational ladder included individuals with more than a grade school education, who never graduated from high school (N = 93). Television topped every other medium with 47.3 percent of calls among this educational group, collecting 44 out of a possible 93 respondents. Less than half that number, 19.4 percent, identified the telephone book as the first source to communicate the existence of the CIS. Radio ranked third, leading 14.0 percent of the respondents to call the CIS.

High school graduates (N = 620) who never attended college composed the next educational level. Once again, television headed the list, gathering a whopping 46.9 percent. Radio followed with 21.3 percent, falling short of collecting half the response of television. More than 10 percentage points below radio, the telephone book ranked third with 8.9 percent. Pamphlets and magazines completed the top five sources of the CIS, collecting 6.6 percent and 4.8 percent, respectively.

Respondents with high school degrees and some college background (N = 676), without becoming college graduates, filled the next educational level. Television dominated

other sources with 36.5 percent. Nearly two-thirds as many respondents, 24.4 percent, identified radio as the first source of learning about the CIS. More than 10 percentage points beneath radio, the telephone book collected 12.3 percent. Pamphlets ranked fourth with 7.2 percent. Friends helped 5.0 percent first learn about the CIS.

College graduates who stopped short of obtaining postgraduate education totaled 994 persons in the survey. Radio edged television as the most frequently identified first source of learning about the CIS, compiling 29.7 percent among these respondents. Four fewer respondents, 29.3 percent of all callers in this category of education, indicated television provided them with their first dose of information about the CIS. Pamphlets moved up one notch from fourth position in the previous educational category to capture 10.5 percent and rank third. The telephone book was the fourth most popular source to publicize the service with 6.9 percent. Magazines led 5.1 percent to call the CIS.

Close to 500 callers indicated they earned a college degree and advanced to postgraduate training. Out of 489 respondents in the highest educational level, 178 of them, 36.4 percent, said radio first communicated the existence of the CIS. More than a 10 percent drop took place before television accumulated 22.7 percent. Another decline of more than 10 percent found pamphlets in third place, collecting

11.0 percent. The telephone book once again ranked fourth, reaching 7.0 percent. Health professionals other than physicians gave 3.7 percent of the respondents their first information about the service, entering the group of the top five sources for the only time in the entire educational analysis.

## Race

White race with age controlled. An analysis of variations in how respondents first heard about the CIS revealed noteworthy results when a control of age was exerted on white respondents. The control permitted more evidence of specific tendencies in regard to utilization of the CIS among certain demographic groups. The findings disclosed television as the dominant source to communicate the CIS to the callers.

Among white callers, television exerted a sizable impact on the respondents across all age categories. Radio gobbled up the greatest share of callers among older whites, surpassing television as the number-one influence. Out of 13 whites who failed to identify their age, 11 of them said television led to the CIS call. Only 35 white respondents under the age of 20 called the CIS. Television and the telephone book caused 12 calls each, equaling 34.3 percent for each source. The next most frequently mentioned source

for the youngest callers, pamphlets, gained recognition as the cause of a call from four respondents or 11.4 percent.

White respondents between the ages of 20 and 29 numbered 153 in total, and 47 of them or 30.7 percent named television as the first source where they learned about the CIS. The telephone book lost ground from the youngest category as only 13.7 percent of white respondents identified it as the influence that led to a call. In third position, pamphlets generated 12.4 percent of the calls. Radio led to 11.8 percent of the calls, and friends persuaded 9.2 percent of the white respondents to contact the service.

The category for ages 30 through 39 caused a six percentage point drop in the influence of television relative to the preceding age group. Only 24.7 percent of the 365 respondents in this category identified television as the first source where they learned about the CIS. The telephone book ranked second again, totaling 16.4 percent. Radio jumped into third place with 15.3 percent of the white callers. Pamphlets fell one position to fourth, causing 11.5 percent of the calls. Magazines and health professionals other than physicians tied for fifth spot with 5.2 percent of the respondents each. Close behind in seventh place, friends convinced 4.9 percent of the callers to contact the CIS.

Television maintained the number-one position among respondents between ages 40 and 49, but once again fell short

of reaching 25 percent. Only 24.9 percent of the 333 respondents indicated that television led them to call the CIS. Pamphlets leaped into second place with 18.3 percent, improving from the fourth-place finish in the previous age group and increasing its share of callers nearly seven percentage points. Radio held onto third position, reaching 17.1 percent of the callers. The telephone book dropped two notches and nearly three percentage points, ranking fourth with 13.5 percent. Magazines retained fifth place, collecting 7.5 percent.

Radio improved more than 25 percentage points from the previous category and ranked as the clear leader in the age category, 50-59 whites. Out of 604 respondents, 259 of them, or 42.9 percent, described radio as the source where they first learned about the CIS. Television gained more than five percentage points from its first-place finish in the preceding category but still fell into second position with 31.0 percent of the respondents. Pamphlets lost more than 11 percentage points from the previous age group and fell from second place to third place as 7.0 percent of the respondents indicated that it led them to contact the CIS. The telephone book led to 5.6 percent of the calls and maintained fourth position, but fell nearly nine percentage points from the previous age group. Magazines clung

tenuously to fifth spot, compiling 2.8 percent of the respondents.

Whites at least 60 years old and beyond (N = 571) indicated that radio caused them to contact the CIS in 42.9 percent of the cases. Respondents in the previous age group also identified radio as the cause of 42.9 percent of the calls. Television ranked second once again, totaling 30.1 percent. Pamphlets repeated the third-place performance from the age 50-59 category, gathering 6.7 percent of the respondents. Magazines and the telephone book reversed positions. A three percentage point increase ranked magazines as the fourth leading source, totaling 5.8 percent. It nipped the telephone book, which landed in fifth position with 5.3 percent of the callers.

Out of 23 white respondents who gave no information about age, 15 of them or 65.2 percent named television as the first source where they heard about the CIS. Television also ranked first among the 52 white respondents who were not asked about their age.

Black race with age controlled. Television ranked first as the source where black respondents of all ages initially learned about the existence of the CIS. The visual medium never failed to collect at least 40 percent of the black respondents in any group. Radio's share of the black respondents grew steadily as the age of the caller increased.

Blacks age 19 and under totaled only 33 callers, but 15 of them cited television as the source where they first learned about the CIS. The total equaled 45.5 percent, falling short of the 51.5 percent that television gathered among black respondents between the ages of 20 and 29. Friends recommended the CIS to 13.6 percent of the black respondents between ages 20 and 29 (N = 132). Health professionals other than physicians suggested the CIS to 7.6 percent of the black callers in their twenties. Radio captured 6.8 percent, finishing fourth. Pamphlets and the telephone book tied for fifth position with 6.1 percent each.

Among blacks between the ages of 30 and 39 (N = 166), 41.6 percent identified television as the first source where they learned about the CIS. Radio jumped to second place, collecting 12.0 percent. The telephone book improved from its fifth-place tie among the previous age category to a third-place finish, totaling 11.4 percent. Pamphlets took fourth with 7.8 percent and friends dropped three places, finishing fifth with 6.0 percent.

Between the ages of 40 and 49, blacks first learned about the CIS from television in 44.9 percent of the 156 cases. Radio ranked second, compiling 18.6 percent. The telephone book maintained third position with 11.5 percent. Friends gained one place but lost 1.5 percentage points, finishing fourth with 4.5 percent.

The majority of blacks between 50 and 59 (N = 187) indicated that television first led them to call the CIS. The total reached 58.8 percent. Radio trailed with 19.3 percent of the callers. The telephone book retained third spot with 6.4 percent. Fourth position belonged to pamphlets with a meager 2.7 percent.

Blacks age 60 and older first learned about the Washington, D.C. area CIS from television in 51.3 percent of the cases. Radio once again ranked second, but significantly increased its share of the callers with 32.9 percent. The telephone book reached third place with only 3.9 percent of the respondents.

White race with control on sex variable. White males (N = 938) learned about the CIS for the first time from radio in 40.1 percent of the cases. Television ranked second with 32.4 percent. Pamphlets finished third, leading 6.3 percent of the white males to contact the CIS. The telephone book took fourth position with 5.3 percent. Magazines trailed and finished fifth with 3.6 percent.

Television ranked first among white females (N = 1,205) with 26.9 percent. Radio followed behind closely, attracting 22.1 percent of white females. The telephone book advanced one slot, moving up to third position with 13.7 percent. Pamphlets fell one position, finishing fourth with

12.9 percent. Magazines matched the fifth-place finish among men, gathering 5.7 percent.

Black race with control on sex variable. The majority of black males first learned about the CIS through television. Out of 371, 196 of them or 52.8 percent indicated television led to their attempts to contact the CIS. Radio failed to exert the same degree of influence among black males as it did among their white counterparts. Among black males, 19.4 percent identified radio as the source, while 40.1 percent of white males gave it credit. Friends and the telephone book tied in third position, each acquiring 6.2 percent. Another tie locked together pamphlets and telephone directory assistance in fifth place with 2.7 percent apiece.

Less than half the black women who called the CIS mentioned television as the source where they first heard about the service. A total of 475 black females responded to the question, and 47.4 percent said television led to their call. Radio followed in second position, attracting 15.8 percent of the black females. The telephone book appealed to 9.3 percent, while pamphlets caused a response from 5.3 percent. Health professionals other than physicians led to calls from 5.1 percent of the black females. In sixth position, friends convinced 4.2 percent to contact the CIS.

White race with education controlled. Out of 4,736 callers who reached the CIS, 2,149 of them identified themselves as white. Only 15 of the 2,149 white respondents indicated that they possessed no more than a grade school education. Among these callers, 33.3 percent said that they learned about the CIS from the telephone book, and 26.7 percent attributed their call to television.

White respondents who attended high school but never graduated totaled 45 callers. Nearly one half, 22 out of 45 or 48.9 percent, mentioned television as the first source where they learned about the CIS. The telephone book ranked second with 22.2 percent.

High school graduates who never attended college (N = 329) indicated that television led to 32.2 percent of the CIS calls. Radio collected 27.4 percent, taking second place. The telephone book ended up third with 12.5 percent. Pamphlets finished in fourth spot, attracting 8.8 percent. Magazines trailed in fifth place, generating 8.2 percent of the CIS calls.

High school graduates who continued their education but never completed the requirements for a college degree (N = 434) represented the next category. The results in regard to both television and radio almost duplicated the findings from the previous group. Television led to 32.0 percent of the calls. Radio matched the 27.4 percent share

of respondents whom it reached in the previous category. The telephone book, pamphlets, and magazines ranked third, fourth, and fifth once again. The telephone book led to 13.8 percent of the CIS calls. Pamphlets caused 8.5 percent of the calls, and magazines led to 4.1 percent of the queries.

College graduates (N = 771) named radio as the first source that led to a CIS call. Nearly a five percentage point jump occurred from the previous educational group as 32.0 percent said radio caused them to contact the service. Television fell to second place with 26.7 percent. Pamphlets leaped into third spot, collecting 11.3 percent. The telephone book dropped back to fourth with 6.7 percent. Magazines maintained fifth place, grabbing 5.7 percent.

Radio soared further ahead with 40.5 percent among respondents with postgraduate training (N = 393). Television slipped, but still clung to second place with 21.4 percent. Pamphlets held third position, accumulating 12.2 percent. The telephone book retained fourth place with 6.4 percent. Health professionals other than physicians collected 3.3 percent of the callers.

The telephone interviewers never asked 101 of the white callers about their educational background. More than one-third, 35.6 percent, mentioned that television caused them to call the CIS. The telephone book ranked second with 18.8 percent. Radio followed closely with 17.8 percent of

the calls. Out of 46 white respondents who declined to mention the extent of their education, 22 of them or 47.8 percent named television as their first source about the CIS.

Black race with education controlled. Only 10 black callers with no more than a grade school education contacted the CIS. Six of them cited television as the source that led them to contact the CIS. The literature review suggested that television exerts a significant influence on those who do not possess a great deal of education. The findings among 6 of the 10 respondents in this category backed it up.

Half the respondents with some high school education indicated that they first learned about the CIS from television. Out of 44 callers in this category, 22 of them named television as the source that led to the CIS call. The telephone book and radio tied for second with 18.2 percent of the callers each.

High school graduates relied on television even more than their less educated counterparts. A total of 270 respondents in this category answered the question, and 169 of the callers identified television as the source that motivated them to contact the service. While 62.6 percent cited television, 14.8 percent named radio. The telephone book collected 5.2 percent, finishing third. Pamphlets logged 4.1 percent of the respondents.

Blacks with some college, but no college diploma, totaled 224 callers. Television took a share of 44.6 percent, while radio ranked second with 20.1 percent. In comparison to the previous category, television lost more than 15 percentage points and radio gained more than five. Friends snatched 10.3 percent of the respondents and the telephone book gathered 8.9 percent. Health professionals other than physicians, and pamphlets tied in fifth place, each collecting 4.5 perrcent.

Black college graduates (N = 181) failed to utilize the CIS as much as the two previous groups. Television's dominance slipped slightly as 40.3 percent of the callers attributed their call to the visual medium. Radio moved up to 21.5 percent of the callers relative to the previous group. The telephone book accounted for 7.2 percent of the respondents. Friends persuaded 5.5 percent of the callers to contact the CIS, ranking fourth. Health professionals other than physicians finished fifth with 5.0 percent.

Blacks with postgraduate training exhibited less reliance on television for information about the CIS than blacks with less education. Out of 68 respondents, 20 of them named television as the source that first provided information about the service. Radio earned an audience of 16.2 percent, finishing second. The telephone book stayed in third position, helping 7.2 percent contact the CIS. Health

professionals other than physicians took fourth place with 7.4 percent of the respondents. Newspapers emerged as the fifth leading source about the CIS, reaching 5.9 percent. A three-way tie resulted among magazines, pamphlets, and physicians as they each earned 4.4 percent. The significant influence of newspapers, magazines, and pamphlets matched the expectation from the literature review that sources of print journalism would influence scholarly respondents more than callers with less education.

Out of 14 respondents who gave no information about their education, eight of them named television as the chief source where they learned about the CIS. Interviewers never asked 31 black respondents about their educational background, but 18 of them said television led them to contact the service.

White race with residence controlled. Whites in the suburbs of Maryland and Virginia represented 80 percent of all whites who contacted the CIS. The District's predominantly black population probably accounted for the comparatively low number of calls from whites within the capital city. Radio surpassed television as the source that first led to CIS calls for whites who resided in the District. Out of 403 callers from the District, 140 of them or 34.7 percent indicated that radio convinced them to contact the service. Television trailed with 31.0 percent.

The telephone book collected 8.4 percent, finishing third. Pamphlets ranked fourth among residents of the District with 7.4 percent, and friends ended up fifth, persuading 3.5 percent. Magazines took hold of sixth spot with 3.2 percent.

Maryland residents who identified themselves as whites totaled 828. Television captured a share of 30.8 percent, nipping radio, which gathered 28.3 percent. Pamphlets moved up one position to third with 10.5 percent. The telephone book slipped a notch from the analysis of whites in the District, gaining fourth place and 8.5 percent. Magazines advanced to fifth spot with 5.4 percent.

Virginia totaled 822 callers who identified themselves as white. Radio reached nearly one-third of them with information about the CIS. The airwaves led 32.7 percent of the respondents to call the CIS, while television caused 28.6 percent to contact the service. In third spot, the telephone book generated 11.1 percent of the calls. Two sources of print journalism finished fourth and fifth. Pamphlets earned a share of 9.9 percent of the callers, and magazines followed with 3.6 percent.

Only 96 white respondents did not indicate a place of residence. The telephone book surprisingly finished first with 20.8 percent. Pamphlets recorded 16.7 percent and took second position. Magazines tied with television for third place as each earned 15.6 percent.

Black race with residence controlled. More than two-thirds of the 847 black respondents lived in the District (N = 578), with nearly another 30 percent of them or 202 based in Maryland and less than 10 percent or 49 located in Virginia. Television ranked as the top source to first communicate the CIS to blacks in either Maryland, Virginia, or the District of Columbia. Radio finished second in each location. The telephone book took third position in the District and Maryland. In the District, television recorded 51.9 percent; radio registered 15.9 percent; and the telephone book gathered 8.1 percent. Among black respondents in Maryland, television reached 46.0 percent; radio accumulated 20.3 percent; and the telephone book collected 8.9 percent. Only 49 black respondents identified Virginia as their place of residence. Television took a share of 42.9 percent, and radio picked up 26.5 percent. No other source led to calls from more than four black respondents in Virginia.

# CHAPTER V

## SOME CONCLUSIONS AND GENERALIZATIONS

The mass media, especially television and radio, effectively communicated the existence of the Washington, D.C. CIS, but interpersonal channels of communication and selected groups barely exerted an influence in the amount of CIS utilization. The phenomenal results of television and radio promotional campaigns may never be equaled because of recent changes in FCC laws that diminished the need for stations to provide public service information to gain relicensure. That leaves interpersonal channels of communication and selected groups as alternatives that must spread the word to supplement television and radio.

One major advantage with television and radio PSAs is the tendency for stations to broadcast them repeatedly over a period of time, fulfilling one of the ingredients to achieve diffusion. Practically every other source of communication failed to continue a promotional campaign for a significant length of time. For example, the project officer of all the CIS offices solicited free advertisements or news articles about the service from some national publications, but many

of the magazines or newspapers only ran either one ad or news story during a six-month period that was studied, beginning in October 1983 and concluding in February 1984. USA Today published an article about the CIS on 10/28/83, but nothing during the next four months. Eighteen other publications gave attention to the CIS during the same six-month period, and none of them except the National Enquirer mentioned the service in a follow-up ad or article, minimizing the potential benefits of the promotions. This may partially explain the disappointing results exhibited in an analysis of magazines and newspapers as promotional vehicles.

Instead of directing promotional efforts at men, who underutilize the CIS in comparison to women, practically all the national magazines that wrote about the CIS appealed to a female readership. Glamour Magazine, Better Homes & Gardens, Women's Day, Family Circle, Lady Com, Working Women, and Redbook may help draw more female callers, which is good, but the absence of even one male-oriented publication during the six-month promotional snapshot indicates a neglect of the underutilization problem among men. The project officer at the NCI, Judith Stein, may wish to actively seek advertising space or news coverage of the CIS from publications geared toward men. Magazines that appeal primarily to upscale, white females will miss most of the demographic groups at greatest risk to develop cancer.

The NCI emphasis on call volume to determine the success or failure of a particular CIS office seems misplaced. Rather than base the decision to renew the contract of a local CIS on the number of calls, strong consideration should be given to the demographic characteristics of the callers. If calls to the CIS come from members of high-risk groups, such as blacks and individuals age 50 or older, the CIS may actually bring individuals into the health care delivery system who might not normally seek medical attention until reaching an advanced stage of cancer. The CIS in Washington, D.C. received a large percentage of calls from blacks, exceeding the national average, despite national promotions in print media that possessed a readership of upscale, white females. Evidently, officials at the CIS in Washington, D.C. must have overcome the lack of support from national campaigns through their own promotional endeavors, but the contract with the NCI that provided funding to operate the local CIS office was allowed to expire anyway.

The cancellation of the contract to conduct the CIS in Washington, D.C. leaves a void in the dissemination of cancer information in a metropolitan area that numerous medical studies have established as an area with high cancer rates, especially among blacks. Now, when a resident of the Washington, D.C. area calls the CIS number, an operator at a

firm that responds to questions from callers throughout the U.S. will not be able to offer referrals to specific physicians, medical centers, and social service agencies within the caller's own community along with appropriate telephone numbers. The decision to eliminate the CIS in Washington, D.C. cuts off a link between physicians, medical centers, and social agencies of Washington, D.C. and the individuals who need their help.

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