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I am submitting herewith a dissertation written by Hilda Jeanette Guthrie entitled "Differences in the Characteristics and Opinions of Those Persons Taking and Those Persons Not Taking the Swine Flu Vaccine in East Tennessee." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Health Education.

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DIFFERENCES IN THE CHARACTERISTICS AND OPINIONS OF THOSE PERSONS TAKING AND THOSE PERSONS NOT TAKING THE SWINE FLU VACCINE IN EAST TENNESSEE

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Hilda Jeanette Guthrie

August 1977

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DEDICATION

This study is dedicated to my late husband, Gary Cecil Guthrie, for his love and confidence in me, and for being the reason why I pursued and received a doctorate.

I also dedicate this study to my family and Gary's family for their love and support. I especially am indebted to my mother for the many prayers and encouraging words during my education.

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ABSTRACT

The purpose of this study was to determine the differences in those persons taking and those persons not taking the swine flu vaccine according to selected characteristics and opinions. A total of 1,028 subjects eighteen and over were interviewed at the public health centers in fifteen of the sixteen counties of the East Tennessee Development District and at the mass immunization clinic and the student union at the University of Tennessee, Knoxville. A questionnaire containing thirty items for the immunized sample and thirty-two items for the nonimmunized sample was developed for use in the interview. Data obtained from the questionnaires were analyzed descriptively using frequency and percents, and statistically using Chi Square and the t-test.

In looking at the major findings of the study for the immunized and nonimmunized samples, the following was concluded: a significantly higher percentage of men were found in the immunized group while a significantly higher percentage of women were not immunized; the nonimmunized group was significantly younger in age composition; the immunized group had smaller families, higher incomes, and a higher educational level representing a higher socioeconomic status; the nonimmunized sample was utilizing the public health facilities more often and for a variety of reasons

other than immunization; more of the subjects in the immunized group had been sick with the flu at some time; the nonimmunized group thought that there was very little chance of catching the swine flu if they did not take the vaccine.

Almost half of the individuals in the nonimmunized sample thought that the vaccine would not protect them against the swine flu; many of the nonimmunized subjects felt that the vaccine was not safe and believed they could catch the swine flu from taking the vaccine; more persons in the non-immunized group believed that they could catch the swine flu from eating pork; more persons in the immunized group seemed to think there would be a swine flu epidemic; and the majority of the individuals in the nonimmunized group had decided not to take the swine flu vaccine before the program was cancelled.

The following recommendations were offered: local leaders should promote and implement immunization campaigns; local mass media should be the primary means of informing the public of the need for the immunization program and should be responsible for relating valid information to the public; local leaders and the mass media should focus on reaching the lower socioeconomic groups of people encouraging preventive health measures and changing their attitudes concerning immunization programs; vaccines should be made widely accessible by establishing clinic locations and times

to meet the convenience of the persons being immunized; further research should be conducted to determine other differences in characteristics and opinions of immunized and nonimmunized groups; the questionnaire utilized in this study should be amended and administered to people in other parts of the country to determine if the characteristics and opinions found in this study are similar to those of persons participating in other immunization campaigns; the instrument should also be administered to other persons besides those using public health facilities; a variety of mechanisms should be used in inoculating the people such as pill form, on a sugar cube, or in drops to be taken orally; some clinics might also have available jet injection guns as well as needles and syringes.

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CHAPTER I

INTRODUCTION

According to Yankauer (32), two virological geneticists predicted the following in 1973:

> A logical sequence to the data presented . . . would be the emergence in man of a Swine-like virus about 1985-1991. They went on to say, . . . the matter of being prepared to produce Swine virus vaccine rapidly should receive attention . . . Man has never been able to intervene rapidly to prevent the morbidity and mortality accompanying the emergence of a major influenza variant, but that opportunity may soon come.

The opportunity came. In early February, 1976, at Fort Dix, New Jersey, a new strain of influenza virus discovered to be A/New Jersey/8/76 (HswlNl) or better known as the swine flu virus, caused one death and affected more than 500 persons (30). Since the new strain of influenza virus was found to be closely related to the virus that caused the 1918-19 pandemic, killing some twenty million people, more than one-half million of them in the United States, there was much cause for concern (32). This was the first time a virus resembling swine influenza had been capable of being transmitted from human-to-human.

Experts from the scientific community were called together to make recommendations and evaluate the risks that could ensue if no action was taken. Acting upon their recommendations and without hesitancy, President Gerald R.

Ford asked Congress on March 24, 1976, to appropriate $135 million so the four manufacturers of flu vaccines could begin production of enough A/New Jersey vaccine to inoculate every man, woman, and child in the United States (20).

The "National Swine Flu Immunization Program of 1976" (30) was plagued by considerable controversy from the time of its inception. Skeptics asked many questions. Was the pandemic predictable with certainty? Was the virus really a reincarnation of the swine flu virus? Did the swine flu virus cause the 1918-19 pandemic? Was the vaccine in production protective?

No one knew the answers to these questions. Public health experts did know, however, that when a new strain of flu virus is discovered, a serious outbreak will often occur in the following flu season.

Many Americans were convinced there was some truth in what the experts said. These persons were immunized against the swine flu. Many persons were scared of the possibility of an epidemic. They also took the vaccine. Many persons were persuaded by friends and relatives to go to the public health department, a private physician, or another source to get that widely publicized shot in the arm. Finally, many persons working in industries or living in nursing homes, prisons, or other facilities took the vaccine because of the convenience of the vaccine program coming to them.

On the other side of the coin were those Americans who for one reason or another did not take the swine flu vaccine. Their reasons were likely just the opposite of those persons taking the vaccine. The safety and efficacy of the vaccine were also questioned by these people.

I. PURPOSE OF THE STUDY

The purpose of this study was to determine the differences in those persons taking and those persons not taking the swine flu vaccine.

II. STATEMENT OF THE PROBLEM

The research problem for this study was to examine selected characteristics and opinions of two groups of people utilizing public health facilities in the sixteen counties of the East Tennessee Development District, and those persons utilizing the mass immunization clinic and the student union at the University of Tennessee, Knoxville. The study was designed to answer the following questions:

A. What are the characteristics and opinions of those persons taking the swine flu vaccine?

B. What are the characteristics and opinions of those persons not taking the swine flu vaccine?

C. Are there any differences between the two groups?

III. HYPOTHESES

The following null hypotheses were offered for the analysis of the study:

A. There are no differences in selected characteristics of those persons taking and those persons not taking the swine flu vaccine.

B. There are no differences in the opinions of those persons taking and of those persons not taking the swine flu vaccine.

IV. NEED FOR THE STUDY

Until "The National Swine Flu Immunization Program of 1976," there had never before been an immunization campaign of such magnitude. This mass immunization program was not compulsory but relied on the mass media to relay to the American people the facts about the swine flu vaccine. The people had the option of taking or not taking the vaccine with the possible sacrifice of a sore arm or a few slight side effects.

Despite the fact that vaccines have been developed for most childhood diseases, parents still do not have their children immunized and epidemics occur from time to time because of this unwillingness. When a disease has almost disappeared from a country because of a vaccine, convincing

the public, even its educated members, to take a vaccine is an extremely difficult task.

Anderson and Arnstein (1) speak of the advantage of health education in dealing with adversaries of vaccination in the following:

> However much one may differ with the ideas of such groups, one must respect their sincerity of purpose as long as the information they publish is correct and not deliberately misleading. Unfortunately this is not always so. In general, however, it reflects a very superficial understanding, as evidenced by the free interchange that they make in their use of such terms as "anti-toxin," "toxin," "toxoid," "serum," and "vaccine." Such misinformation serves only to mislead the public. The anti-vaccination groups are usually animated with a crusading zeal that could accomplish much good if directed toward a worthy cause. While they influence a small number of persons and may therefore embarrass a public health program, their total influence is usually not large . . .
>
> Nothing is accomplished by public controversy with them. Far greater good comes from quiet and dignified public and personal education.

Indispensable to a vaccination campaign is the need to foster public understanding of the necessity for immunization. The public must be persuaded to participate of its own free will and not be forced by legal regulations requiring compulsory vaccination. At the same time persuasion is of no use if the public is not convinced of the usefulness of the vaccine.

In past immunization campaigns, the factors that influenced the decisional process were discerning disease susceptibility, the severity of the disease, and the

effectiveness of the vaccine. The literature has shown that previous personal experiences and the environment in which a person lives influences a person's motivations. Of those that took the swine flu vaccine, what then were their motivating forces? What also motivated those that did not take the vaccine?

At the beginning we are aware of some of the conclusions a study of this design will bring, but new insights of social, psychologic, and economic factors may be advanced from this research. Such studies give an overview and advocate features and areas of programming that may not have been given satisfactory direction in the past.

Few studies of the impressions of the public towards immunization campaigns have been undertaken. It is, however, important to know how the public thinks. It is also important to know the attributes of the people who have these impressions. In reality, the administration of the United States government is influenced by the opinions of the public inducing much of the new legislation.

V. LIMITATIONS

A. The study involved only those persons aged eighteen and over who utilized public health facilities in fifteen of the sixteen counties of the East Tennessee Development District, and those persons

aged eighteen and over who utilized the mass immunization clinic and the student union at the University of Tennessee.

B. The study was limited to reporting the responses of only those persons who were interviewed through the use of the questionnaire.

C. The findings and conclusions of the study pertain only to the population of the East Tennessee Development District and the University of Tennessee, Knoxville.

VI. DELIMITATIONS

A. The study was confined to the public health facilities of the East Tennessee Development District and the mass immunization clinic and the student union at the University of Tennessee, Knoxville.

B. The study was delimited to those persons utilizing the public health facilities of the East Tennessee Development District, and those persons utilizing the mass immunization clinic and the student union at the University of Tennessee, Knoxville.

VII. BASIC ASSUMPTIONS

A. The individuals in the sample provided reliable information regarding demographic data and opinions during the interview.

B. The questionnaire used was an acceptable means for collecting data during the investigation.

VIII. DEFINITIONS OF TERMS

East Tennessee Development District. A region in the state of Tennessee composed of sixteen counties including Anderson, Blount, Campbell, Claiborne, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier, and Union.

Swine flu. A strain of influenza caused by the A-Swine virus thought to be responsible for the 1918-19 pandemic.

Vaccine. Any biological material used to protect against disease, usually an attenuated form of the micro-organism against which it protects.

Public Health Facility. An agency responsible for the health matters of the people in a township, city, or county government.

Characteristic. A distinctive trait, feature, or quality of an individual.

Opinion. A belief not based on knowledge but on what is thought to be true.

Mass immunization clinic. A time (hours or days) set aside for inoculating a large number of people with a particular vaccine.

IX. ORGANIZATION OF THE STUDY

The study consists of six chapters. Chapter I includes an introduction, the purpose of the study, limitations and delimitations of the study, basic assumptions, and definitions of terms. Chapter II summarizes a review of selected literature relevant to studies related in content and studies related in methodology, and includes a history of the swine flu from February, 1976, to April, 1977. Chapter III deals with the research design employed in the study. Chapter IV presents an analysis and interpretation of the data. Chapter V consists of the summary, conclusions, and recommendations. Chapter VI discusses an overview of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature covered three major areas: (1) studies related in content; (2) studies related in methodology; and (3) a history of the swine flu from February, 1976, to April, 1977. Since the swine flu virus had only recently been isolated in humans at the time of this writing, there were no published studies related to the swine flu immunization campaign, but there were studies similar in respect to previous immunization campaigns. These studies were included in the area of those related in content. The studies related in methodology were concerned with various ways to conduct surveys including techniques of interviewing and questionnaire construction.

Because the swine flu was a controversial topic, one that almost anyone would readily discuss, it was thought appropriate to include a concise history of the swine flu from the time of discovery of the first cases in February, 1976, to the end of the flu season, 1977. This summary of the sequence of events serves as a reference for those wanting to look back to the year of the widely discussed and debatable swine flu immunization campaign.

I. STUDIES RELATED IN CONTENT

Rosenstock, Derryberry, and Carriger (25) through the U.S. Public Health Service, asked states and universities to supply information obtained from systematic studies which would help to identify (in terms of age, education, income, and other factors) segments of the population that have been hard to reach for vaccination, and which would help to explain why people accept or fail to accept poliomyelitis vaccinations. Literature on these topics was also searched.

Forty research activities on poliomyelitis vaccination were identified. The question of why people accept or fail to accept vaccination for themselves and their families was dealt with in seventeen of these studies. Four of the studies were unavailable. Thirteen of the studies were reviewed with seven being discarded because their design had methodological limitations or because they could not be properly evaluated.

An analysis of the six remaining studies indicated that two broad classes of factors, personal readiness factors and social and situational factors, determined the decision to participate in vaccination programs. The personal readiness factors included a person's beliefs about his susceptibility to poliomyelitis, about the severity of the disease, and about vaccination. These were the major components of the individual's readiness to take action. The social factors of

pressure and convenience were also important in guiding the decision to be vaccinated or not. Decisions to be vaccinated were affected by social class membership and a weak personal readiness for poliomyelitis vaccination.

In stimulating greater acceptance of vaccination, the traditional approach of mass media of communication was not as effective as personal contacts with members of the so-called hard-to-reach group.

Byrne et al. (4) cooperated with the Rhode Island Department of Health and National Communicable Disease Center in testing an Infant Immunization Surveillance project. The following questions were under consideration:

1. Are more infants immunized as a result of the program than in its absence, other factors remaining equal?
2. Are immunizations begun at appropriate ages?
3. What socioeconomic segment of the population is most affected by the program?
4. What is the cost per additional child immunized as a result of the program?

The census tracts of Rhode Island provided an index of social rank based on composite measurements of education and occupational status. Information appearing on the birth certificates and the demographic characteristics were used to study infants born in the state. Two matched populations,

the experimental numbering 442,000 people and the control numbering 450,300 people, contained nearly equal populations of each of the three social classes, lower, middle, and upper.

The experimental population was mailed educational material and a card to be signed by the physician signifying that the infant had begun an immunization series. Within thirty days a second mailing was made if there had been no response to the first mailing. A public health nurse followed up if there was no response from the second mailing within another thirty days. After the nurses' visit, there was a final card-return rate of over 96%.

Fourteen months after the immunization surveillance program had begun, parents of infants of both the experimental and control groups were interviewed either on the telephone or in their homes. They were asked (1) if their infant had started an immunization series, (2) at what age it was started, and (3) how many diptheria, pertussis, and tetanus (DPT), polio, measles, or smallpox innoculations had been received.

The results were as follows:

1. The program stimulated parents to seek immunization for their children during the first three months of life. There were significant differences in the lower and upper classes between the experimental and control groups, while those in the middle class barely missed significance at the 5 percent level.

2. In the lower and middle classes, completion of a primary DPT series is a more positive and important accomplishment than initiation of an immunization series.

3. There were low levels of protection observed for poliomyelitis and a significant stimulation was observed only for the lower class.

4. The program was weak in motivating parents to have their children immunized against measles and smallpox as these were at very low levels.

5. With a few minor changes in the program and without diminishing its effectiveness, the findings indicated that costs could be further reduced by nearly one third.

Jones (17) summarized a one year study offering live mumps vaccine in a public health clinic and school immunization program. In a Washington county in 1968, 1,024 persons went to the health department clinic for mumps immunization. There were more males than females immunized in all age groups from five years up. The number of males and females was about the same in the group aged one to four years. The demand in the clinic for mumps vaccine was highest for preschool and early school age children and indeed was very small for older teenagers and adults.

Immunizations against mumps were also offered in six school districts. Thirteen percent (the highest) of the enrollment of the fourth grades requested mumps vaccine while

only 2% (the lowest) of the enrollment of the twelfth grades requested mumps vaccine. These findings were consistent with those observed in the health department clinic.

Gray et al. (13) summarized data obtained from a sample of mothers in a western state, which disclosed that mothers of the lower socioeconomic class had their children immunized less frequently than did mothers of the middle and upper social classes. Another important conclusion was that lower social class mothers less frequently than middle and upper social class mothers reported the belief that their friends expected them to utilize available immunization services for protection of their children against polio. This was determined to be one of the reasons why lower social class persons tend to have lower immunization rates.

Markland and Durand (21) reported on a statewide study in Missouri of the sociopsychological factors affecting infant immunization. Variables used in the study were perceptions of disease susceptibility, disease severity, vaccine efficacy, and such socioeconomic factors as family size, parental age, education, income, and race. Information as to the parent's awareness and exposure to various media was also obtained.

The following profiles were described from the results of the statistical analyses for the adequately and inadequately immunized populations:

Adequately Immunized

1. High perception of disease seriousness
2. High perception of risk of disease
3. Adequate knowledge of efficacy of vaccine
4. Adequate knowledge of length of protection afforded by vaccine
5. Higher age levels—parents
6. Higher education levels—parents
7. Smaller families
8. Greater media exposure
9. Greater proportion of white children

Inadequately Immunized

1. Low perception of disease seriousness
2. Low perception of risk of disease
3. Inadequate knowledge of efficacy of vaccine
4. Inadequate knowledge of length of protection afforded by vaccine
5. Lower age levels—parents
6. Lower education levels—parents
7. Larger families
8. Lesser media exposure
9. Lesser proportion of white children

The survey and subsequent statistical analyses indicated that there were differences in the general population between immunized and nonimmunized populations. Substantial differences were also noted within the nonimmunized group when data were analyzed by geographic area.

II. STUDIES RELATED IN METHODOLOGY

Kaplan (18) evaluated health education activities in San Diego, California, by opinion-poll and other techniques. One study involved a mass X-ray survey and on the basis of the results obtained in the poll, many problems were foreseen that arose during the campaign. A significant increase in the

number of persons who were willing to be X-rayed was a demonstration of the educational work.

From this study and other similar studies done in the San Diego area, the polling method was found to be applicable in public health work such as:

1. Planning, conducting, and evaluating health education campaigns.

2. Gathering information useful to volunteer health organizations in the conduct of their fund-raising campaigns.

3. Determining the usefulness of publications published by health departments and volunteer health organizations.

4. Obtaining additional public support for health programs.

5. Gathering information essential to the understanding of the health needs of a community.

Clausen et al. (7) reported a study in which a sample of mothers of second-grade children in five schools participating in polio vaccine trials in one Virginia county were interviewed. Information derived from the interviews elucidated the factors which influenced the decision of parents in other sections of the county as to their participation in vaccine trials.

Nearly two-thirds of the eligible children in this county participated in the vaccine trials. Mothers who read more and consulted more both with medical and nonmedical sources about

the vaccine were better informed about the nature of the trials and thus gave their consent for their children to participate. They were more likely to have taken precautions to protect their children against polio in the past. Considerable differences in educational level and socioeconomic status were found between those parents who gave their consent and those who did not.

Deasy (9) concluded from the results of the previous study that information disseminated in the mass media usually reaches families of a certain occupational-educational level. The persons who lacked knowledge of and motivation to participate in the program were of the lower socioeconomic strata.

Glasser (12) detailed a nation-wide survey by the National Foundation for Infantile Paralysis that was conducted to determine why many people were not being vaccinated for poliomyelitis. Dr. George Gallup's organization, the American Institute of Public Opinion, conducted the actual study with the assistance of the Bureau of Applied Social Research. The Bureau's job was to design the study, analyze the data, and develop the conclusions.

The objectives of the study were:

1. To determine the nature of public resistance to vaccination.

2. To learn how this problem differed from the general problem of the acceptance of any new vaccine.

3. To discover the key people or contacts who help or stimulate families to go ahead with vaccination.

4. To learn to what extent the public education program of the National Foundation should be aimed at individual vaccination and to what extent at stimulating family vaccination.

5. To determine what part lack of funds plays in holding up vaccination.

6. To note any regional variations in the acceptance of the vaccine and reasons given for acceptance or resistance.

Field interviewers conducted 3,509 personal interviews between January 14 and January 28, 1957, throughout the nation. The interviews, lasting 45 minutes, were acquired from a sample of adults under forty years of age, a sample of mothers of teenage children, and a sample of mothers of children of all ages under 21.

The study found that the public knew a great deal about the vaccine, but were failing to take advantage of it because of a lack of positive guidance to the clinic or doctor's office for inoculation.

The more important findings and conclusions of the study were:

1. A high percentage of the target population was unprotected.

2. A lower rate of acceptance was found in the South most likely due to low economic and educational status. Teenagers in the Mountain and Pacific states also showed a lower acceptance rate probably because of the fears generated from the Cutter "incident" which centered in the Far West.

3. Adults failed to make use of the vaccine because of procrastination and the feeling that they were not susceptible to polio. They also believed that victory over polio had been achieved.

4. There were gaps in specific knowledge such as the fact that parents did not believe their teenagers were as susceptible to polio as younger children. Young adults, and to a lesser extent parents of teenagers, did not know that the vaccine was available.

5. People were likely to be better informed about the vaccine and the threat of polio and to be immunized if they had more education and higher incomes.

6. Confidence as to the efficacy of the vaccine was expressed by nine out of ten adults.

7. The cost of the vaccine was not a major deterrent to vaccination.

8. Physicians were influential in parents' decisions to have their children vaccinated.

9. Nine out of ten adults determined the three most reliable sources of information about the polio vaccine were

the physician (59%), the local National Foundation for Infantile Paralysis (22%) and the city and county health officers (16%).

10. The large numbers that had not obtained inoculation were mostly from the lower socioeconomic class.

Merrill et al. (22) reported on a study done by the California State Department of Public Health in the summer of 1956. With the help of the U.S. Bureau of the Census, a survey was conducted of California households to collect information concerning the status of poliomyelitis vaccination and about attitudes toward polio. The public was also asked their opinions and attitudes toward air pollution and toward child health practices.

The sample comprised 3,628 households, or about one out of every 1,200 households in the state. Between mid-May and mid-July, 1956, Census Bureau personnel interviewed the mother, or mother substitute, as well as a randomly selected adult member of each household. Information furnished from the mother respondent included the immunization status of her children for polio, smallpox, diphtheria, pertussis, and tetanus, the tonsillectomy history of all household members, and her attitude toward polio vaccination. The other adult member of the household gave information on his or her attitude toward polio, polio vaccination, and smallpox vaccination.

Census Bureau interviewers used a standardized questionnaire to collect the data. Attitude data were collected primarily by open-ended questions with built-in probes.

The findings were as follows:

1. When the early program limited vaccination to children ages five to nine, many mothers thought that the vaccination was unimportant for younger or older children, instead of realizing that eligibility had been restricted because of the shortage of the vaccine.

2. When the vaccination program was extended to children under five and over nine years of age, many mothers still did not know this seven months later.

3. Public attitudes were favorably influenced by an aggressive, consistent program cooperatively planned and carried out by a local health department, medical society, and other community agencies.

4. There was a lack of public understanding that the disease affected adults as well as children.

5. Peers had a definite influence in certain persons seeking the vaccine.

6. Unfavorable attitudes toward the vaccine were associated with low socioeconomic status and low educational level.

Belcher (3) studied a representative sample from the population of Greene and Hancock Counties located in the Piedmont section of central Georgia. The 1956 survey included interviews at 701 households. Children, ages one through nineteen years, were found at 372 of the households. There were two major conclusions drawn from the study:

1. Blacks had much higher immunization rates than Whites probably because that they had not heard of the furor concerning the efficacy of the vaccine, and

2. The polio immunization program in the two counties was successful in reaching many groups, especially the nonwhite segment.

Hutchison et al. (14) described the use of a mailed questionnaire as a screening device in routing health exams. The random sample of 1,277 adults was taken from enrollees in one of the medical groups of the Health Insurance Plan of Greater New York. The control group of 1,351 enrollees was matched with the experimental group. A subgroup from each of the larger groups was chosen because they had had no complete physical examination during one year prior to this study. The two subgroups were compared.

Each enrollee was sent a health questionnaire. About three in five enrollees returned it, and these individuals were asked to come in for a general physical examination. Out of an eligible population of 1,001, there were 173 examinations of the control group.

Two important findings were concluded from the study. The most consistent finding was that the study group included more patients than the control group in almost all subgroups defined by a variety of measures of medical urgency. The second pertinent finding was a moderate tendency of the study group to be more heavily balanced toward low-urgency patients than in the control group.

On evaluation of the health questionnaire as a screening device for identifying patients with special urgency for medical care, it was found to be a very poor predictor.

Suchman (28) reported several public opinion and behavior surveys that have been conducted in the area of public health. One survey of the effectiveness of a mass X-ray campaign in New York City discovered that participation was more of a matter of convenience than of adequate motivation. The slum neighborhoods of New York City were almost totally lacking in social organization and so attempts to secure community organization support failed.

Other studies specify a combination of personal readiness factors such as perceived susceptibility and recognition of threat, and situational factors such as timing and convenience, as significant in determining the degree of public participation.

In Florida, a survey of public responses to a poliomyelitis vaccination campaign was done to study the

interrelationship of psychological motivational factors and sociological pressures. A finding of the study was that if a person believed that his friends had taken the new vaccine, he was usually immunized also. The most forceful predictors of vaccine acceptance and rejection were the variables such as membership in social organization, social class, and education.

Kogan et al. (19) discussed a study done after dessicated measles virus was inadvertently not mixed with sterile water diluent at a Sunday mass immunization clinic held in one community of Los Angeles County in 1966. Sterile water injections were received by 467 children from 209 families, but the error was promptly corrected and all known susceptible children of these families were immunized.

Followup interviews with 181 mothers of the 209 families involved were conducted by the Los Angeles County Health Department to learn how they felt about the error and to determine what kind of families attended the clinic. A control group was drawn from among families attending a measles immunization clinic on a following Sunday.

Reactions to the mistake were mostly negative and these parents readily completed the vaccination of their children. In contrast, many of the parents who were reassured by the explanation of the vaccination error failed to go to a second vaccination clinic until they had been visited several times by health department personnel.

Piraino et al. (23) studied an outbreak of Hong Kong flu in Milwaukee, Wisconsin, in a sample of 637 members of the city health department and their families. The data were obtained through questionnaires about the medical history and by serologic tests on postepidemic blood specimens. The attack rates ranging from 41 to 65% were high for all ages in the study group but lowest for the preschool age children and adults over 60 years.

The epidemic had a great impact on city resources, medical supplies, hospital services, and schools. Fifty percent of the adult population were out of work because of the influenza.

The flu vaccine given in October 1968 did not contain the new Hong Kong antigen and was entirely ineffective, whereas the vaccine given in December 1968 reduced flu by 40% because it contained antigens from the Hong Kong strain.

III. A HISTORY OF THE SWINE FLU (FEBRUARY, 1976-APRIL, 1977)

During the fall and winter of 1976, the citizens of the United States were involved in what was one of the most extensive public health campaigns ever carried out in the country—an influenza vaccine program bigger and more intensive than any other in the nation's history. The illness and consequential death of Private David Lewis, a nineteen-year-old recruit at the Fort Dix, New Jersey, army base, prompted

this program (20). On February 4, 1976, he complained of a fever, nasal congestion, sore throat, and headache and was told to remain in the barracks for forty-eight hours and then report for a checkup (20). Instead Lewis participated in a march the next night at which time he collapsed and was dead shortly after arrival at the base hospital.

A throat swab revealed the presence of a virus resembling a kind usually noted only in swine. In taking blood samples of individuals who had survived the "Spanish flu" of 1918-19, the present virus resembled the one that was responsible for the pandemic that killed approximately twenty million people in the world and over 500 thousand people in the United States (26).

There were twelve confirmed cases of swine flu at Fort Dix, but after blood samples were taken from 10% of the military personnel there and tests were undertaken, over 500 gave serologic evidence of exposure to it within a six-week period (20). This outbreak led to discussions by federal, state, and other experts. President Gerald R. Ford met with medical and health experts and following consideration of recommendations, he announced the vaccination program on March 24, 1976 (26). Shortly thereafter, the House Appropriations Committee approved spending $135,064,000 for the production and distribution of a swine flu vaccine (32). The original plan of the government was to buy the vaccine

from the manufacturers and then make it available to all 215 million Americans between the first of September and the end of November to ensure protection before the normal flu season began. This, however, did not go as planned.

A number of questions were raised by the program. The first question asked was why should people be vaccinated against swine flu. Timothy Larkin (20), special assistant to the Commissioner of Food and Drugs, wrote:

> When a new strain of flu virus is discovered, a serious outbreak often occurs in the following "flu season." And when the new strain appears to be a close relative of the virus that raged worldwide in 1918-19, killing some twenty million people, there is cause for concern—and action. That's why FDA (the Food and Drug Administration) is in the forefront of an unprecedented effort to draw on the resources and knowledge of government, industry, and the health professions to produce, distribute, and administer to the American people a vaccine that is capable of preventing an epidemic of potentially dangerous flu.

The purpose of inoculation with the vaccine was to prevent a person's contracting swine flu, officially known as A/New Jersey/76 flu virus. The vaccine caused the recipient's body to build up antibodies to fight the disease, and it was expected that this protection would begin about two weeks after inoculation. Experts varied on their estimates of the effectiveness of the vaccine—some said the vaccine was 85% effective while others went as low as 20%.

The swine flu itself was not thought to be a killer. The over 500,000 flu-related deaths in the United States

during the pandemic of 1918-19 were, as have been all flu-related deaths since, due to complications. These were mainly lower respiratory tract infections such as broncho-pneumonia and viral pneumonia (32). The Fort Dix youth died from viral pneumonia accompanied by exhaustion from the march and influenzal infection (8).

Some people wanted to know if it was dangerous to eat pork during this time. Experts said that if the virus was present in the hog, it would only be in the lung tissue and not in the meat that humans eat. The virus would also be destroyed by cooking even at temperatures considerably below 170 degrees Fahrenheit, recommended by the National Livestock and Meat Board for cooking pork (20).

The United States swine flu immunization program began in early October and continued into December, 1976. Locations and times for the inoculations were determined by the local and state health departments. Vaccinations were also administered by private doctors, who, even though the vaccine was free, could charge for the office visit or for administering the inoculation. However, those doctors charging for the vaccine itself did not have the liability protection provided by legislation approved by the U.S. Congress early in August, 1976.

Inoculation was especially recommended for individuals over sixty-five years of age, as well as those with chronic

illnesses such as diabetes, heart, lung, and kidney diseases. Recommended for those persons was a bivalent vaccine prepared to protect against both the A/Victoria/75 and A/New Jersey/76 strains. Other adults received the monovalent vaccine which protected only against the swine flu strain. Those persons three to twenty-four years of age received two equal doses of swine flu vaccine four weeks apart, since one shot did not offer enough protection from the swine flu and too large a dosage in one shot could cause adverse reactions. Each person taking the bivalent or monovalent vaccine was asked to sign an informed consent form relating the possibility of side effects after taking the vaccine.

Reactions to the vaccination could have possibly included a sore arm and redness around the area where the shot was given, a fever of 100 to 104° F. for a few days, or other slight side effects such as generalized aching and headaches (20). In testing the vaccine on over 5,000 individuals, only 1.9% of those receiving the inoculations had even developed a fever. There was no danger of contracting the swine flu from the vaccine because killed viruses were used.

In making the swine flu vaccine, the virus was cultured in fertile hen's eggs. Each egg intended for vaccine purposes was candled or examined with light to make certain that it contained a live embryo. Next, the eleven-day-old eggs were inoculated with a seed virus. Following a period of

incubation, the eggs were opened mechanically, the virus-laden allantoic fluid was harvested, and formaldehyde was used to kill the virus (20). Vaccine production was complete after further processing.

Because of the possibility of side effects, insurance companies were unwilling to provide the swine flu vaccine manufacturers with liability coverage in this program. However, the U.S. Congress on August 12, 1976, passed a law specifying that all injury claims in the program were to be filed against the federal government under the Federal Tort Claims Act (8). It, in turn, could sue the vaccine maker or other participant charged with the negligence claimed in the original lawsuit.

The swine flu vaccination program was plagued with problems from the beginning. Several persons died—most after ordinary heart attacks—within two days of getting the swine flu shots. The Center for Disease Control said that the fatalities were simply representative of the normal death rate among the one million or more aged persons vaccinated during this time.

In the middle of December, 1976, the swine flu immunization program and other influenza immunization programs were halted because of a possible link with Guillain Barré syndrome (GBS). Persons afflicted with GBS, so-called French Polio, experienced temporary weakness in the limbs, loss of sensation, difficulty in breathing, and more serious

paralysis. Most recovered after several weeks but about 5% of its victims died (5).

On February 8, 1977, after much deliberation, the moratorium on bivalent vaccine was lifted for the high-risk population. Medical and health experts thought that the risks of the elderly and chronically ill having influenza far outweighed the risks of influenza vaccines. Those persons taking the vaccine after the moratorium was lifted were asked to sign a new informed consent form relating the risks of GBS following immunization.

The last report of the number of GBS cases showed that about half of those cases had been inoculated with the swine flu vaccine or another flu vaccine. In addition, in about half of the deaths associated with GBS, the victims had been inoculated with the swine flu vaccine or another flu vaccine (6).

At the time of this writing, there had been only five confirmed cases of swine flu during the flu season of 1976-77, in comparison to the several hundred that had fallen prey to GBS. Many claims, suits, and inquiries about claim forms were received by the federal government as a result of the flu shots. A campaign aimed at inoculating 150 million Americans reached fewer than 45 million ending as it began plagued with troubles (24).

IV. SUMMARY

In summary, most of the studies dealt with in Chapter II have been concerned with why people accept or reject vaccination for themselves and their families. The conclusions could be divided into two main categories: (1) personal factors which include a person's beliefs about his susceptibility to a disease, about the severity of the disease, and about vaccination; others which include family size, parental age, education, income, and race; and (2) social and situational factors which include timing, pressure, and convenience.

This chapter of the related literature provided ideas and information of past studies which were beneficial in designing and directing this study. Furthermore, valuable information as to research design, questionnaire construction, administration, and evaluation was reported. In addition, a summary of the history of the swine flu from February, 1976, to April, 1977, was included in this chapter to serve as a reference for those individuals needing to refer to the study for pertinent information about the program.

CHAPTER III

METHODOLOGY

I. OVERVIEW

In his book on interviewing in social research, Hyman (15) wrote the following:

> What people say as well as what people do are woven into the fabric of history. In the last three decades there has been a technological revolution in the recording of the spoken opinions of representative samples of entire populations. Systematic sampling of opinion of management and of workers, of customers, and of the general public can provide facts indispensable for policy-making.

The major objective of this study was to determine the differences in those persons taking and those persons not taking the swine flu vaccine by examining the characteristics and opinions of these two groups. Subjects were selected from those persons utilizing public health facilities in fifteen of the sixteen counties of the East Tennessee Development District and from those persons utilizing the mass immunization clinic and the student union at the University of Tennessee, Knoxville.

A questionnaire was developed for the purpose of collecting the data. The items of the questionnaire were constructed to obtain information on demographic data as well as information on the subject's opinions toward the swine flu

vaccine. Statistics were then applied to the data to ascertain the differences in the two groups.

II. INSTRUMENTATION

After an exhaustive search of the literature, it was determined that a questionnaire would have to be designed since an appropriate questionnaire for use in the study could not be found. A review of literature was made on the construction, validation, administration, and scoring of questionnaires.

Jacobs (16) stated that the object of a questionnaire is to ask the right question, and to ask it in such a way that the investigator will find out what he or she needs to know. The investigator should ask the following:

1. Who needs the information?
2. What decision will be made based on the information?
3. What facts will affect the decision?
4. Who is being asked?
5. What are the consequences of a wrong answer?

Three major types of questions can be used in constructing a questionnaire. These include open-ended, two-way, and multiple-choice. Several factors must be considered in deciding which type of question to use. These include the following:

1. How much you know about the range of possible answers.
2. How much time your respondents have or are willing to give you.

3. The number of subjects needed to get satisfactory reliability, and the resulting requirements for data analysis.

An apparent advantage of the open-ended question is that it is easy to ask. However, the disadvantages outnumber the advantages of open-ended questions in that:

1. It will take more time to obtain written responses to the questions.
2. The respondent may give an incomplete answer or no answer at all after seeing how much work is involved in filling out the questionnaire.
3. Analysis of open-ended questions is very difficult and time-consuming, and must be done by someone who is knowledgeable of the question content.
4. Open-ended questions may be easily misinterpreted by the respondent since there is no set of fixed choices.

The two-way question is quickly and easily answered since the respondent has to choose only one of two alternatives. This type of question is easily developed and rapidly analyzed. But the disadvantages outweigh the advantages again since (1) two alternatives might not be enough to answer some questions; (2) some respondents tend to choose the first or last answer they see; and (3) the two alternatives may overlap instead of being mutually exclusive of each other.

Multiple-choice questions have many advantages. They can be easily scored and so the data analysis is relatively inexpensive since no special content expertise is required. Respondents can answer the questions in a much shorter amount of time than with the open-ended questions, and thus are more likely to complete the questionnaire. All respondents are put on an equal basis since they can choose from the same set of alternatives to questions. However, one problem with the multiple-choice type of question is that the question maker is required to know all of the significant possible alternatives when formulating the question.

In constructing the questionnaire used in this study, the item content was established by gleaning professional journals, books, and newspapers. Other information was gathered from television, radio, and persons working closely with the swine flu vaccine program. Each of the questions was edited using the criteria by Van Dalen (31) listed in Appendix A on the framing and ordering of questions. The first draft of the questionnaire was presented to the doctoral committee, and from their suggestions for revision, a second draft was designed to pretest.

The pretest was conducted at the Knox County Health Center by interviewing ten persons using the questionnaire. Five interviews were obtained from persons that took the swine flu vaccine and five from persons that did not take the

swine flu vaccine. The purposes of the pretest were to determine if the questionnaire elicited the information sought in the study and to determine the questionnaire's weaknesses.

Backstrom and Hursh (2) wrote that it is necessary to know the problems for respondents as well as those encountered by the interviewers. Every instance of misunderstanding, poor wording, inconvenient spacing, awkward format, or whatever should be pointed out in the completed questionnaires. The respondents' and interviewers' reactions to the subject matter and the length of the questionnaire are also essential in drafting the final form.

After pretesting, parts of the questionnaire were reworked with changes made in confused wording. The final draft of the questionnaire is found in Appendix B.

III. SUBJECTS

Subjects for the study were selected from those persons, eighteen and older, utilizing a public health facility in the East Tennessee Development District. Arrangements were made with each person in charge of the swine flu vaccine program at the public health facilities (usually the chief nurse) to administer a questionnaire to those persons taking the swine flu vaccine. Permission was also granted by the director of each of the sixteen public health facilities for the investigator to administer a questionnaire to those persons

utilizing the facility for other purposes such as tuberculosis screening, Women's and Infant's Clinics (WIC), etc., and not for the purpose of taking the swine flu vaccine. The East Tennessee Regional Office of the Tennessee Department of Public Health assisted in gaining permission to collect the data at each of the facilities.

Subjects from the University of Tennessee, Knoxville, were selected from students, faculty, and staff obtaining the swine flu vaccine during a mass immunization clinic on campus and from students, faculty, and staff in the student union who did not obtain the vaccine. The administrator of the University of Tennessee, Knoxville, Student Health Service gave his approval for this endeavor.

IV. DATA COLLECTION

Van Dalen (31) wrote that three factors determine the size of an adequate sample. These include the nature of the population, the type of sampling design, and the degree of precision desired.

The sample population was determined by using an N of 1,000 persons, and determining what percent each of the counties were of the total population of all sixteen counties. This suggestion was made by the statistician (27) at the East Tennessee Development District Office since she and her co-workers had conducted surveys similarly. For example, the

1975 population (10) of Knox County was assessed to be 295,111. The total population of the sixteen counties was 759,393 in 1975 (10). By dividing 295,111 by 759,353, 38.86% was determined. The 38.86% was multiplied by 1,000 to decide the number of persons to be interviewed in Knox County, which totaled 390.

The other fifteen counties were treated the same mathematically to arrive at the number of persons to be interviewed in each county health facility. The number of persons from each county and the University of Tennessee, Knoxville, was divided with half of the interviews taken of those persons who were immunized, and the other half of those persons who were not immunized. When the division caused the halves to be odd numbers, one was added to make the numbers even. For example, when figuring the number of interviews to be conducted in Knox County, the total came to 389. One was added to make 390 so that the same number of interviews (195) would be administered to each of the two groups.

Following (Table 1) is a list of the sixteen counties and the University of Tennessee, Knoxville, along with the number of persons administered a questionnaire at each of the facilities.

However, there were no data collected in Monroe County since the director of the health center in Madisonville, Tennessee, refused to participate in the survey. Since

TABLE 1

IMMUNIZED AND NONIMMUNIZED SAMPLES
BY COUNTY AND UNIVERSITY

County and University	No. of Immunized Persons	No. of Nonimmunized Persons
Anderson	41	41
Blount	46	46
Campbell	20	20
Claiborne	15	15
Cocke	19	19
Grainger	10	10
Hamblen	29	29
Jefferson	18	18
Knox	195	195
Loudon	18	18
Monroe	17	17
Morgan	10	10
Roane	27	27
Scott	11	11
Sevier	21	21
Union	7	7
University of Tennessee, Knoxville	27	27
Total	531	531

thirty-four interviews that were to have been conducted in Monroe County were cancelled, this reduced the total number of interviews to 1,028 administered in fifteen counties and at the University of Tennessee, Knoxville.

A personal interview by the investigator or trained interviewers utilizing the questionnaire was determined to be the best method of data collection. By interviewing each person in the sample, the investigator or other interviewers could explain the purpose and significance of the study, clarify points, answer questions, and motivate respondents to answer questions carefully and truthfully. Van Dalen (31) stated that fewer partial responses and refusals to reply are obtained when the researcher personally presents the questionnaire.

The investigator and other interviewers interviewed every third person in a public health center in an attempt to make the samples random. However, this was sometimes impossible particularly in the case of the nonimmunized group. The Winter of '77 prevented many people from coming to the public health center for services reducing the number of possible interviewees.

On a few occasions the researcher solicited assistance with the interviewing but the greatest number of interviews were conducted by the researcher alone. For those individuals who participated in the interviewing process, a thirty minute

session conducted by the investigator was held on the day they were to interview. The interviewers were shown exactly how each item of the questionnaire was to be read and marked on the page. Each interviewer roleplayed the interview with the investigator stopping at critical points to discuss how various answers could lead the interviewer astray. Major points of the essentials of good interviewing reported by Backstrom and Hursh (2) were brought out in the training session (Appendix C).

The 514 interviews of persons who took the swine flu vaccine were conducted from the beginning of November, 1976, to the middle of December, 1976, prior to the cancellation of the swine flu immunization program. Most of the health centers had a certain day of the week or specific hours of the day in which they administered the swine flu vaccine, and simultaneously carried out other services. Mass immunization clinics were scheduled from time to time and conducted on the weekends or at times other than the regular hours of the health center. The response to the immunization program began slowly but as the news media reported daily on the events pertaining to the swine flu, the numbers of people wanting the vaccine were overwhelming, particularly at the mass immunization clinics. But just before the swine flu immunization program was cancelled, the lines of people had shortened considerably. For the sixteen counties in the East

Tennessee Development District, 39.37% (11) were immunized during the swine flu immunization campaign.

Interviews of the nonimmunized group, also numbering 514, were taken from the beginning of January to the middle of February, 1977. A dreadful winter causing hazardous road conditions delayed completion of the survey. The investigator and interviewers were unable to travel much of the scheduled interview time. If they did make the trip, there was likely to be no one at the health center to interview. In some instances, several trips were made to the same county to obtain the required number of interviews at the health center.

The Student Health Service of the University of Tennessee, Knoxville, held a mass swine flu immunization clinic for three days in November, 1976, for students, faculty, and staff. The researcher interviewed immunized persons during the clinic and later conducted interviews of nonimmunized persons at the student union, having an equal number of student, faculty, and staff interviews in each group. Every third person was interviewed in the mass immunization clinic and the student union in an attempt to make the samples random.

The interview took approximately five minutes per person for the immunized group. Two open-ended questions added to the end of the questionnaire after the swine flu immunization program was cancelled caused the process to be longer for

those not immunized. Interviews were much easier to obtain from the immunized group than from the nonimmunized group since those persons were more eager to discuss the swine flu.

The East Tennessee Development District's sixteen counties covered approximately 6,500 square miles (10). The shortest distance driven in time was about fifteen minutes to Knox County Health Center in Knoxville, Tennessee. Huntsville, Tennessee, the county seat of Scott County, was the longest trip with about one hour and a half driving time one way.

V. STATISTICAL DESIGN

Since the questionnaire was devised to gather demographic information and opinions concerning the swine flu vaccine, these data were presented descriptively according to frequency and percents. The Chi Square test for two independent samples was the statistical test chosen to determine if there were differences in the immunized and nonimmunized samples according to selected characteristics and opinions at the .05 level of significance. The t-test for two independent samples was calculated for the variable of age and for the variable that contained how many times an individual had been sick with the flu.

VI. SUMMARY

Chapter III presented the methodology used in the investigation. A satisfactory instrument for obtaining demographic information and opinions was not available. Therefore, a questionnaire containing thirty items was developed for use in interviewing the immunized and nonimmunized samples. Two open-ended questions were added to the questionnaire before collecting the nonimmunized group data since the swine flu immunization program had been cancelled.

The study samples were drawn from the East Tennessee Development District and the University of Tennessee, Knoxville, where 1,028 subjects were interviewed in the public health facilities of each county and the mass immunization clinic and student union at the University of Tennessee, Knoxville.

Each of the independent variables on the questionnaire was analyzed descriptively with frequency and percents for each of the two samples. Chi Square and the t-test were the statistical tests employed for determining if there were significant differences in the immunized and nonimmunized groups for each variable on the questionnaire.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

I. INTRODUCTION

The purpose of this investigation was to determine the differences between those persons taking and those persons not taking the swine flu vaccine according to selected characteristics and opinions. The data collection instrument or questionnaire contained thirty items used in interviewing the immunized group and thirty-two items used in interviewing the nonimmunized group. Two items were added for the nonimmunized group after the cancellation of the swine flu immunization program and before the researcher began to interview this group.

This chapter contains an analytical interpretation of the information obtained in the 1,028 interviews conducted in the East Tennessee Development District and at the University of Tennessee, Knoxville. The number of subjects in the immunized and nonimmunized samples was based on the population of a county in ratio to the population of the sixteen counties. A descriptive analysis of the immunized sample is reported in Section II, while Section III summarizes the same for the nonimmunized sample. In Section IV, the Chi Square test of significance was used to determine

if there was a statistically significant difference between the immunized and nonimmunized samples for each variable except two variables where the t-test for two independent samples was utilized. Section V is a summary of the chapter.

II. DESCRIPTIVE ANALYSIS OF THE IMMUNIZED SAMPLE

The number of persons interviewed in each county of the East Tennessee Development District and at the University of Tennessee, Knoxville that were immunized with the swine flu vaccine can be seen in Table 2. Knox County was the largest with a total of 195 subjects interviewed at the Knox County Health Center. Seven subjects were interviewed at the health center in Union County, the smallest county in the district. The University of Tennessee, Knoxville was also included in the sample with twenty-seven interviews conducted at the mass immunization clinic in November, 1976. Twenty-two students, three faculty members, and two persons on the staff were interviewed. A total of 514 interviews were taken; 204 or 40% were males and 310 or 60% were females.

Interviews of White subjects totaled 496 or 96% while only 4% or 20 subjects were Black. Shown in Table 3 are the ages of the sample. The ages ranged from 18 to 84, with the mean age being 39.8 years with a standard deviation of 16.3. The midpoint age was 36.6 years. The mode age was 27 years.

TABLE 2

IMMUNIZED SAMPLE BY COUNTY AND UNIVERSITY

	County and University	No. of Persons	Percentage
1.	Anderson	41	8
2.	Blount	46	9
3.	Campbell	20	4
4.	Claiborne	15	3
5.	Cocke	19	4
6.	Grainger	10	2
7.	Hamblen	29	6
8.	Jefferson	18	4
9.	Knox	195	38
10.	Loudon	18	4
11.	Morgan	10	10
12.	Roane	27	5
13.	Scott	11	2
14.	Sevier	21	4
15.	Union	7	1
16.	University of Tennesse, Knoxville	27	5
	Total	514	100

TABLE 3

IMMUNIZED SAMPLE BY AGE

Age	No. of Persons	Percentage
18	19	4
19	18	4
20	16	3
21	8	2
22	17	3
23	16	3
24	14	3
25	11	2
26	13	3
27	26	5
28	19	4
29	20	4
30	5	1
31	7	1
32	12	2
33	8	2
34	10	2
35	11	2
36	5	1
37	14	3
38	6	1
39	7	1
40	8	2
41	11	2
42	6	1
43	5	1
44	11	2
45	5	1
46	8	2
47	6	1
48	8	2
49	5	1
50	8	2
51	10	2
52	8	2
53	7	1
54	7	1
55	15	3

TABLE 3 (Continued)

Age	No. of Persons	Percentage
56	6	1
57	4	1
58	4	1
59	11	2
60	7	1
61	5	1
62	6	1
63	7	1
64	10	2
65	3	1
66	9	2
67	3	1
68	2	0
69	2	0
70	3	0
71	4	1
72	2	0
73	2	0
74	5	1
75	4	1
76	1	0
79	2	0
80	1	0
84	1	0
Total	514	100

Of the 514 subjects, 88 were single, 377 married, 18 divorced, and 31 widowed.

Information on the number of children from 0 to 18 is presented in Table 4, with 159 subjects having no children to one subject having 18. The mean was 1.7 children with a standard deviation of 1.8.

TABLE 4

IMMUNIZED SAMPLE BY FAMILY SIZE

No. of Children	Frequency	Percentage
0	159	31
1	88	17
2	133	26
3	66	13
4	38	7
5	15	3
6	6	1
7	4	1
9	3	1
11	1	0
18	1	0
Total	514	100

The income of the immunized sample is contained in Table 5. Almost one-half or 49% of the subjects had a family income of $10,000 and over, with 107 or 21% having an income between $10,000 and $14,999 and 146 or 28% having an income of $15,000 and over.

The number of years of education of each person is identified in Table 6. Three persons had no education.

TABLE 5

IMMUNIZED SAMPLE BY INCOME

Income	Frequency	Percentage
Could not determine income	3	0
Less than $2,000	66	13
$2,000-2,999	30	6
$3,000-3,999	26	5
$4,000-4,999	24	5
$5,000-6,999	42	8
$7,000-9,999	70	14
$10,000-14,999	107	21
$15,000 & over	146	28
Total	514	100

TABLE 6

IMMUNIZED SAMPLE BY EDUCATION

No. of Years Completed	Frequency	Percentage
0	3	1
3	4	1
4	8	2
5	10	2
6	6	1
7	12	2
8	36	7
9	17	3
10	20	4
11	10	2
12	169	33
13	50	10
14	55	11
15	22	4
16	53	10
17	12	2
18	15	3
19	12	2
Total	514	100

Those persons with 12 years of school, mostly high school graduates, numbered 169. After high school, 127 persons attended business college or nursing school (R.N. and L.P.N.), had one to three years at a college or university, or had some kind of technical training such as electronics, drafting, cosmetology, etc. Individuals with 16 years of school, mostly college graduates, numbered 53. Thirty-nine persons had 17-19 years of education indicating an advanced degree such as a Master's or Ph.D. in most cases. The mean educational level was 12.4 years, while the median was 12.3 years.

The majority of individuals in the sample or 78% said that they only came to the public health facility in case of a special vaccine program like the swine flu, although 18% of the respondents said that they came at least once or twice per year. Twenty persons replied that they came three to six times per year and only two persons said that they came about once a month. The next item on the questionnaire dealt with the kind of transportation used in getting to the public health facility. Ninety-eight percent said that they came in a car while the other 2% said that they rode a bus (1%) or walked (1%). Since these two questions did not apply to the University of Tennessee, Knoxville, they were not asked during the interview.

The chronic illnesses that subjects had before or at the time of the interview are listed along with frequencies and percentages in Table 7. Arthritis or rheumatism was the most often reported illness. Fifty persons or 10% of the immunized group reported this illness while 21 persons or 4% said that they had once had heart disease or presently suffered from it. A total of 25% of the sample reported that they had or had once had one or more of the chronic illnesses listed on the questionnaire. However, only one chronic illness per person was recorded in the data.

TABLE 7

CHRONIC ILLNESSES REPORTED BY IMMUNIZED SAMPLE

Chronic Illnesses	Frequency	Percentage
Heart Disease	21	4
Hypertension	5	1
Cancer	9	2
Diabetes	7	1
Lung Disease	19	4
Arthritis or Rheumatism	50	10
Nervous System Disease	10	2
Kidney Disease	9	2
No Chronic Illnesses at Time of Interview	384	75

When asked if they had ever been sick with any kind of flu, 331 persons answered affirmatively. Two persons were not sure they had ever had the flu. Table 8 summarizes the number of times the 331 persons had been sick with the flu.

Thirty-five percent had been sick at least once with the flu. Fifteen was the highest reported number of times with only 1% reporting this. The mean was 1.5 times.

TABLE 8

REPORTED INCIDENCE OF FLU OF IMMUNIZED SAMPLE

No. of Times Respondents Had Been Sick with the Flu	Frequency	Percentage
1	174	35
2	73	14
3	29	6
4	12	2
5	12	2
6	12	2
7	3	1
8	2	0
9	2	0
10	3	1
11	1	0
12	5	1
15	3	1

Ninety-one subjects or 18% said that they took flu vaccines yearly. Twenty-seven percent or 140 subjects said that they had taken a flu vaccine at some time in their life. Of the 140 subjects, 36 or 7% reported that they had gotten sick from taking other flu vaccines.

The individuals in the sample were asked if they were sick at the time of the interview. Twenty-three persons or 4% replied yes. The sicknesses identified were colds; stomach problems; emphysema; sore throat; nerves; kidney

infection; allergies; headache; asthma; back problems; bladder infection; laryngitis; toothache; the flu; and glaucoma. The largest number of subjects had colds. When asked if they were allergic to drugs or other chemicals, 98 or 19% said yes and mentioned penicillin, sulfa drugs; codeine; novacaine; Vitamin B shots; aspirin; narcotics; tranquilizers; ampicillin; ammonia; histamine; tetracycline; tetanus shots; and hormones as the drugs or chemicals to which they were allergic. Penicillin was the drug mentioned most often with sulfa drugs second.

Television was the first and most popular place for subjects to hear about the swine flu vaccine with 66% reporting this. The newspaper informed 23% of the subjects, while 9% heard about the vaccine on the radio, heard it from a friend or relative, or read about it in a magazine. Two percent said that they heard about the swine flu vaccine from other sources such as the doctor, health center, or work.

According to 64% of the respondents, friends and relatives were reported to have had little or no influence on their decision to be vaccinated. Sixteen percent of the individuals said that friends and relatives had some influence on their decision while 10% responded with quite a bit; 7% with a great deal; and 3% with a very great deal.

Subjects were asked if they thought they would catch the swine flu if they did not take the vaccine. Thirty-six

percent thought that there was some chance they might catch the swine flu, while 30% said that there was very little chance; 16% said a little chance; 9% said a great chance; and 2% said a very great chance. Eight percent of the respondents said that they did not know.

In response to the question asking them if they believed the vaccine would protect them against the swine flu, 241 or 47% replied to a great extent. Thirty-seven percent or 188 thought that the vaccine would protect them to some extent and 10% or 51 thought to a very great extent. The remaining 6% responded with don't know (3%) and to a little or very little extent (3%). When asked if they believed they would catch the flu from taking the swine flu vaccine, 24 or 5% responded with yes and 9 or 2% responded with don't know.

In reply to the question as to whether they believed the vaccine was safe, 3 subjects or 1% answered to a very little extent; 10 or 2% replied to a little extent; and 17 or 3% said that they did not know. The greatest number of answers came in response to the last three alternatives—121 or 24% replied to some extent; 261 or 51% said to a great extent; and 102 or 20% thought that the vaccine was safe to a very great extent. Forty-two percent or 216 individuals said that they would be more inclined to take the vaccine if it were a pill as opposed to injection.

Twenty-five persons or 5% said they believed they could catch the swine flu from eating pork. Another 5% or 26 persons said that they did not know how to answer the question.

Finally, the immunized sample was asked their opinion as to whether there would be a swine flu epidemic. The largest number of respondents thought that there might be some chance of an epidemic (215 or 42%), but there were only 11 subjects or 2% that thought there was a very great chance; 19% or 100 said a little chance; 10% or 51 said a great chance; and 3% or 15 said that they did not know.

In summary, the following characteristics and opinions were reported by the immunized sample:

1. A total of 514 interviews were taken; 204 or 40% were males and 310 or 60% were females.
2. The number of White subjects interviewed totaled 496 or 96% while only 20 subjects or 4% were Black.
3. The ages ranged from 18 to 84, with the mean age being 39.8 years.
4. Of the 514 subjects, 88 were single, 377 married, 18 divorced, and 31 widowed.
5. The number of children of each subject ranged from 0 to 18 with the mean being 1.7 children.
6. Almost one-half or 49% of the subjects had an income of $10,000 and over.

7. The mean educational level was 12.4 years.
8. The majority of individuals in the sample or 78% said that they only went to the public health facility in case of a special vaccine program like the swine flu.
9. Ninety-eight percent of the sample said that they came to the public health facility in a car.
10. A total of 25% of the sample reported that they presently had or once had one or more of the chronic illnesses listed on the questionnaire.
11. When asked if they had ever been sick with any kind of flu, 331 persons answered affirmatively. Thirty-five percent of these 331 persons had been sick at least once with the flu. The mean was 1.5 times.
12. Ninety-one subjects or 18% said that they took flu vaccines yearly.
13. Twenty-seven percent or 140 subjects said that they had taken a flu vaccine at some time in their life. Of the 140 subjects, 36 or 7% reported that they had gotten sick from taking other flu vaccines.
14. Four percent of the subjects said that they were sick at the time of the interview.
15. Ninety-eight or 19% of the subjects said that they were allergic to drugs or other chemicals.

16. The majority of the subjects (66%) reported television as the first place they heard about the swine flu vaccine.
17. According to 64% of the respondents, friends and relatives were reported to have had little or no influence on their decision to be vaccinated.
18. Thirty-six percent thought that there was some chance they might catch the swine flu if they did not take the vaccine.
19. In response to the question asking them if they believed the vaccine would protect them against the swine flu, 241 or 47% replied to a great extent.
20. When asked if they believed they would catch the flu from taking the swine flu vaccine, 24 or 5% responded with yes.
21. Fifty-one percent or 261 subjects believed that the vaccine was safe to a great extent.
22. Forty-two percent or 216 individuals said that they would be more inclined to take the vaccine if it was a pill as opposed to injection.
23. Twenty-five persons or 5% said they believed they could catch the swine flu from eating pork.
24. The largest percent of respondents thought that there might be some chance there would be a swine flu epidemic.

III. DESCRIPTIVE ANALYSIS OF THE NONIMMUNIZED SAMPLE

The number of persons interviewed in each county of the East Tennessee Development District and at the University of Tennessee, Knoxville that were not immunized with the swine flu vaccine can be seen in Table 9. Knox County was the largest with a total of 195 subjects interviewed at the Knox County Health Center. Seven subjects were interviewed at the health center in Union County, the smallest county in the district. The University of Tennessee, Knoxville was also included in the sample with 27 interviews conducted at the student center in February, 1977. Twenty-two students, three faculty members, and two persons on the staff were interviewed. A total of 514 interviews were taken; 141 or 27% were males and 373 or 73% were females.

Interviews of White subjects totaled 460 or 89% while only 10% or 51 subjects were Black. The other three subjects or 1% was represented by the Indian, Iranian, and Malaysian nationalities. Shown in Table 10 are the ages of the sample. The ages ranged from 18 to 79, with the mean age being 32.2 years with a standard deviation of 13.8. The midpoint age was 27.1 years. The mode age was 18 years. Of the 514 subjects, 95 were single, 357 married, 46 divorced, and 16 widowed.

TABLE 9

NONIMMUNIZED SAMPLE BY COUNTY AND UNIVERSITY

	County and University	No. of Persons	Percentage
1.	Anderson	41	8
2.	Blount	46	9
3.	Campbell	20	4
4.	Claiborne	15	3
5.	Cocke	19	4
6.	Grainger	10	2
7.	Hamblen	29	6
8.	Jefferson	18	4
9.	Knox	195	38
10.	Loudon	18	4
11.	Morgan	10	1
12.	Roane	27	5
13.	Scott	11	2
14.	Sevier	21	4
15.	Union	7	1
16.	University of Tennessee, Knoxville	27	5
	Total	514	100

TABLE 10

NONIMMUNIZED SAMPLE BY AGE

AGE	No. of Persons	Percentage
18	45	9
19	16	3
20	33	6
21	21	4
22	29	6
23	29	6
24	19	4
25	27	5
26	24	5
27	23	5
28	20	4
29	15	3
30	17	3
31	7	1
32	10	3
33	10	3
34	5	1
35	12	2
36	8	2
37	4	1
38	6	1
39	3	1
40	6	1
41	5	1
42	7	1
43	7	1
44	5	1
45	10	3
46	4	1
47	7	1
48	3	1
49	2	0
50	6	1
51	6	1
52	7	1
53	5	1
54	1	0
55	4	1
57	5	1
58	2	0

TABLE 10 (Continued)

Age	No. of Persons	Percentage
59	5	1
60	5	1
61	5	1
62	2	0
63	3	1
64	2	0
65	2	0
67	2	0
68	2	0
69	3	1
70	2	0
71	1	0
73	1	0
74	1	0
76	2	0
79	1	0
Total	514	100

Information on the number of children from 0 to 16 is presented in Table 11, with 110 subjects having no children to one subject having 16. The mean was 2.1 children with a standard deviation of 2.3.

TABLE 11

NONIMMUNIZED SAMPLE BY FAMILY SIZE

No. of Children	Frequency	Percentage
0	110	21
1	139	27
2	113	22
3	59	11
4	35	7
5	19	4
6	9	2
7	11	2
8	7	2
9	7	2
12	2	0
12	1	0
14	1	0
16	1	0
Total	514	100

The income of the nonimmunized sample is contained in Table 12. More than one-half or 55% of the subjects had an income of $4,999 or less, with the largest number (22 or 24%) of the subjects at the less than $2,000 level.

The number of years of education of each person is identified in Table 13. Five persons had no education.

TABLE 12

NONIMMUNIZED SAMPLE BY INCOME

Income	Frequency	Percentage
Could not determine income	9	2
Less than $2,000	112	22
$2,000-2,999	61	12
$3,000-3,999	48	9
$4,000-4,999	52	10
$5,000-6,999	61	12
$7,000-9,999	74	14
$10,000-14,999	51	10
$15,000 & over	46	9
Total	514	100

TABLE 13

NONIMMUNIZED SAMPLE BY EDUCATION

No. of Years Completed	Frequency	Percentage
0	5	1
2	3	0
3	2	0
4	6	1
5	6	1
6	15	3
7	12	2
8	48	9
9	41	8
10	65	13
11	60	12
12	142	28
13	31	6
14	20	4
15	24	5
16	19	4
17	5	1
18	4	1
19	6	1
Total	514	100

Those persons with 12 years of school, mostly high school graduates, numbered 142. After high school, 75 persons attended business college or nursing school (R.N. and L.P.N.), had one to three years at a college or university, or had some kind of technical training such as electronics, drafting, cosmetology, etc. Individuals with 16 years of school, mostly college graduates with baccalaureate degrees, numbered 19. Twenty persons had 17-19 years of education indicating an advanced degree such as a Master's or Ph.D. in most cases. The mean educational level was 11.1 years, while the median was 11.5 years.

The greatest number of individuals (216 or 42%) in the sample came to the public health facility at least once or twice per year. The next greatest number (123 or 24%) was in the category of three to six times per year. Thirty-two individuals or 6% said that they came about once per month and eight or 2% said that they came more often than once per month. Forty-eight individuals or 9% said that they never came for themselves but usually drove or came with a friend or relative. For 31 persons or 6%, it was the first time for them to come to the public health facility in a long time, and it was the first time 29 persons or 6% had ever been. The next item on the questionnaire dealt with the kind of transportation used in getting to the public health facility. Ninety percent said that they came in a car while

the other 10% said that they rode a bus (3%), came in a taxi (2%), or walked (4%). Since these two questions did not apply to the University of Tennessee, Knoxville, they were not asked during the interview.

The chronic illnesses that subjects had before or at the time of the interview are listed along with frequencies and percentages in Table 14. Lung disease was the most often reported illness. Twenty-four persons or 5% of the nonimmunized group reported this illness while 23 persons or 4% said that they had once had arthritis or rheumatism or presently suffered from it. A total of 26% of the sample reported they had or had once had one or more of the chronic illnesses listed on the questionnaire. However, only one chronic illness per person was recorded in the data.

TABLE 14

CHRONIC ILLNESSES REPORTED BY NONIMMUNIZED SAMPLE

Chronic Illnesses	Frequency	Percentage
Heart Disease	18	4
Hypertension	2	0
Cancer	11	2
Diabetes	13	3
Lung Disease	24	5
Arthritis or Rheumatism	23	4
Nervous System Disease	21	4
Kidney Disease	20	4
No Chronic Illnesses at Time of Interview	384	75

When asked if they had ever been sick with any kind of flu, 240 persons answered affirmatively. Table 15 summarizes the number of times the 240 persons had been sick with the flu. Sixteen percent had been sick at least once with the flu. Thirty was the highest reported number of times with only one person reporting this. The mean was 1.6 times.

TABLE 15

REPORTED INCIDENCE OF FLU OF NONIMMUNIZED SAMPLE

No. of Times Respondents Had Been Sick with the Flu	Frequency	Percentage
1	84	16
2	56	11
3	35	7
4	19	4
5	11	2
6	9	2
7	2	0
8	6	1
9	1	0
10	7	1
11	1	0
12	3	1
14	1	0
20	4	1
30	1	0

Thirty-two subjects or 6% said that they took flu vaccines yearly. Twenty-nine percent or 151 subjects said that they had taken a flu vaccine at some time in their life. Sixty-four subjects or 12% reported that they had gotten sick from taking other flu vaccines.

The individuals in the sample were asked if they were sick at the time of the interview. Sixty-one persons or 12% replied yes. The sicknesses identified were colds; stomach problems; emphysema; sore throat; nerves; kidney infection; allergies; headache; asthma; back problems; bladder infection; laryngitis; toothache; the flu; and glaucoma. The largest number of subjects had colds. When asked if they were allergic to drugs or other chemicals, 113 or 22% said yes and mentioned penicillin; sulfa drugs, codeine; novacaine; Vitamin B shots; aspirin; narcotics; tranquilizers; ampicillin; ammonia; histamine; tetracycline; tetanus shots; and hormones as the drugs or chemicals to which they were allergic. Penicillin was the drug mentioned most often with sulfa drugs second.

Television was the first and most popular place for subjects to hear about the swine flu vaccine with 71% reporting this. The newspaper informed 14% of the subjects, while 12% heard about the vaccine on the radio, heard it from a friend or relative, or read about it in a magazine. Four percent said that they heard about the swine flu vaccine from other sources such as the doctor, health center, or work.

According to 82% of the respondents, friends and relatives were reported to have had little or no influence on their decision to not be vaccinated. Twelve percent of the individuals said that friends and relatives had some

influence on their decision while 4% responded with quite a bit; 1% with a great deal; and 1% with a very great deal.

Subjects were asked if they thought they would catch the swine flu if they did not take the vaccine. Seventy-two percent thought that there was very little chance they might catch the swine flu, while 13% said that there was some chance; 10% said a little chance; 1% said a great chance; and another 1% said a very great chance. Three percent of the respondents said they did not know.

In response to the question asking them if they believed the vaccine would protect them against the swine flu, 217 or 42% replied to a very little extent. Twenty-seven percent or 137 thought that the vaccine would protect them to some extent and 12% or 64 thought to a little extent. The remaining 18% responded with don't know (5%), with to a great extent (11%), and with to a very great extent (2%). When asked if they believed they would catch the flu from taking the swine flu vaccine, 96 or 19% responded with yes and 23 or 4% responded with don't know.

In reply to the question as to whether they believed the vaccine was safe, one-half of the sample (50% or 217) answered to a very little extent; 72 or 14% replied to a little extent and 105 or 20% said to some extent. Fifty-two subjects or 10% thought that the vaccine was safe to a great extent and only eight subjects or 2% responded that it was

safe to a very great extent. Four percent or 19 of those persons interviewed did not know if the vaccine was safe. Thirty-one percent or 157 individuals said that they would be more inclined to take the vaccine if it was a pill as opposed to injection.

Forty-three persons or 8% said they believed they could catch the swine flu from eating pork. Another 4% or 22 persons said that they did not know how to answer the question.

The nonimmunized sample was asked their opinion as to whether there would be a swine flu epidemic. The largest number of respondents thought that there was very little chance there might be an epidemic (296 or 58%), but there were four responses or 2% that thought there was a very great chance of an epidemic. In the middle, 20% or 105 said a little chance; 17% or 89 said some chance; 1% or 10 said a great chance; and 2% or 10 said that they did not know.

The nonimmunized sample was asked two additional questions. The investigator deemed the questions necessary since the swine flu immunization program had been cancelled and the study sought to find the reasons why this group of subjects had not been immunized. The subjects were first asked if they had already decided not to take the vaccine prior to the program being cancelled. Seventy-nine percent or 408 answered affirmatively. They were then asked the

reason why they did not take the vaccine. Table 16 contains the nine categories of reasons indicated by the nonimmunized group as the explanations why they did not take the swine flu vaccine. The greatest percentage of the respondents (122 or 24%) were apathetic to the vaccine and the program. These persons were not interested in taking any medicine they did not feel necessary, or they did not consider taking the vaccine because they had never had the flu that many times. To the other extreme were Categories 4 and 7 which had sixteen persons or 3% in each. In Category 4, the respondents thought it was a money-making racket for President Ford to get reelected. In the seventh category of responses, the subjects had gotten the flu from taking other flu vaccines.

In summary, the following characteristics and opinions were reported by the nonimmunized sample:

1. A total of 514 interviews were taken; 141 or 27% were males and 373 or 73% were females.
2. The number of White subjects interviewed totaled 460 or 89% while only 51 subjects or 10% were Black. One percent of the subjects were of another nationality.
3. The ages ranged from 18 to 79, with the mean age being 32.2 years.
4. Of the 514 subjects, 95 were single, 357 married, 46 divorced, and 16 widowed.
5. The number of children of each subject ranged from 0 to 16 with the mean being 2.1 children.

TABLE 16

CATEGORIES OF REASONS WHY THE NONIMMUNIZED GROUP DID NOT TAKE THE VACCINE

Category	Frequency	Percentage
1. Heard about deaths and side effects; thought the shot would give them the flu; friends got sick from taking the vaccine.	90	18
2. Did not like shots.	34	7
3. Felt the vaccine was unnecessary; never get the flu or colds; did not want to take the vaccine; thought they would get the swine flu even if immunized; thought that they could take care of themselves if they got the flu; did not take drugs to prevent illness; did not think there would be an epidemic.	122	24
4. Was political to get Ford reelected; thought the government was making money off of the vaccine; thought it was a government plot to kill off the old people; instigated by the same people that sent their boys to Viet Nam.	16	3

TABLE 16 (Continued)

	Category	Frequency	Percentage
5.	Doctor did not recommend it because of sickness or surgery at the time of the vaccine program; because of so many allergies to drugs, and other things such as serum, food, pollen, and egg; because of lung and heart conditions; did not think pregnant women could take it; heard that diabetics could not take it.	39	8
6.	Lack of transportation; were going to take it but did not get around to it; too busy at the time of the program; would have taken it if any cases had been reported; did not know the shots were free; thought you had to be over 25 to get the vaccine.	93	18
7.	Because other flu vaccines gave them the flu; took vaccines before and got the flu anyway.	16	3
8.	Afraid of it because it was not proven safe.	65	13
9.	Did not test the vaccine enough.	39	8

6. More than one-half or 55% of the subjects had an income of $4,999 or less.
7. The mean educational level was 11.1 years.
8. The greatest number of individuals (216 or 42%) in the sample came to the public health facility at least once or twice per year.
9. Ninety percent of the sample said that they came to the public health facility in a car.
10. A total of 26% of the sample reported that they presently had or once had one or more of the chronic illnesses listed on the questionnaire.
11. When asked if they had ever been sick with any kind of flu, 240 persons answered affirmatively. Sixteen percent of these 240 persons had been sick at least once with the flu. The mean was 1.6 times.
12. Thirty-two subjects or 6% said that they took flu vaccines yearly.
13. Twenty-nine percent or 151 subjects said that they had taken a flu vaccine at some time in their life. Of the 151 subjects, 64 or 12% reported that they had gotten sick from taking other flu vaccines.
14. Twelve percent of the sample said that they were sick at the time of the interview.

15. Twenty-two percent or 113 of the subjects said that they were allergic to drugs or other chemicals.
16. The majority of the subjects (71%) reported television as the first place they heard about the swine flu vaccine.
17. According to 419 respondents, friends and relatives were reported to have had little or no influence on their decision to not be vaccinated.
18. Seventy-two percent thought that there was very little chance they might catch the swine flu if they did not take the vaccine.
19. In response to the question asking them if they believed the vaccine would protect them against the swine flu, 217 or 42% replied to a very little extent.
20. When asked if they believed they would catch the flu from taking the swine flu vaccine, 96 or 19% responded with yes.
21. Fifty percent or 217 subjects believed that the vaccine was safe to a very little extent.
22. Thirty-one percent or 157 individuals said that they would be more inclined to take the vaccine if it was a pill as opposed to injection.
23. Forty-three persons or 8% said they believed they could catch the swine flu from eating pork.

24. The largest percent of respondents thought that there was very little chance there would be a swine flu epidemic.
25. Seventy-nine percent or 408 subjects said that they had already decided not to take the vaccine prior to the program being cancelled.
26. The greatest percentage of the respondents (122 or 24%) were apathetic to the vaccine and the program, this being the reason why they did not take the swine flu vaccine.

IV. STATISTICAL ANALYSIS OF THE DATA

The Chi Square test for two independent samples was used to determine if there was a statistically significant difference in the immunized and nonimmunized samples according to each item on the questionnaire. The null hypotheses were tested at the .05 level of significance. The first hypothesis tested was that there would be no significant differences in selected characteristics of those persons taking and those persons not taking the swine flu vaccine. Hypothesis two stated that there would be no significant differences in the opinions of the immunized and nonimmunized groups.

The data in Table 17 present a composite picture of the number of males and females to take the swine flu vaccine. The Chi Square analysis indicated a significant difference

between the two groups. A significantly higher percentage of men were immunized while a significantly higher percentage of women were found in the nonimmunized group.

TABLE 17

RELATIONSHIP OF STUDY SAMPLES BY SEX

	Male	Female
Immunized	204	310
Nonimmunized	141	373

$\chi^2 = 16.78$ 1df $\chi^2_{.05} = 3.84$ N = 1028

There was a significant difference in the races of the two samples. The number of Whites decreased and the number of Blacks increased in the nonimmunized sample. Table 18 presents this information. The χ^2 value was 19.36 with two degrees of freedom.

TABLE 18

RELATIONSHIP OF STUDY SAMPLES BY RACE

	White	Black	Other
Immunized	496	17	1
Nonimmunized	460	51	3

$\chi^2 = 19.36$ 2df $\chi^2_{.05} = 5.99$ N = 1028

Table 19 supplies the data concerned with the marital status of the two samples. There was a significant difference in the two samples. In the immunized group, there were less single, more married, and less divorced subjects. A χ^2 value of 17.80 with three degrees of freedom was found. The significant difference might be accounted for by the fact that the nonimmunized group was significantly younger in age composition reflected in the difference of the mean age of the two groups. The mean age for the immunized group was 39.8 years while the nonimmunized group's mean age was 32.2 years. This age differential was statistically significant at the .05 level when a t-test was calculated. Table 20 contains this information.

There was a significant difference by family size at the .05 level between the two samples. The data for this variable are presented in Table 21. More subjects in the nonimmunized group had two or more children.

The χ^2 value for income was 114.82 with seven degrees of freedom. A significant difference was found between the two groups. The results are presented in Table 22. Income was much higher for the immunized group with a majority of the subjects having an income of $7,000 and over, while the majority of the nonimmunized group had an income of $4,999 or less.

TABLE 19

RELATIONSHIP OF STUDY SAMPLES BY MARITAL STATUS

	Single	Married	Divorced	Widowed
Immunized	88	377	18	31
Nonimmunized	95	357	46	16

$\chi^2 = 17.80$ 3df $\chi^2_{.05} = 7.82$ N = 1028

TABLE 20

RELATIONSHIP OF STUDY SAMPLES BY AGE

	No. of Subjects	Mean	Standard Deviation	Standard Error	t Value	Degrees of Freedom	2 - Tail Probability
Age							
Immunized	514	39.85	16.3	0.72	8.11	1026	0.000
Nonimmunized	514	32.20	13.8	0.61			

TABLE 21

RELATIONSHIP OF STUDY SAMPLES BY FAMILY SIZE

	0	1	2	3	4	5	6	7	8	9	11	12	13	14	16	18
Immunized	159	88	133	66	38	15	6	4	0	3	1	0	0	0	0	1
Nonimmunized	110	139	113	59	35	19	9	11	7	7	0	2	1	1	1	0

$\chi^2 = 42.46$ 15df $\chi^2_{.05} = 25$ N = 1028

TABLE 22

RELATIONSHIP OF STUDY SAMPLES BY INCOME

	Less than $2,000	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000 & over
Immunized	66	30	26	24	42	70	107	146
Nonimmunized	112	61	48	52	61	74	51	46

$\chi^2 = 114.82$ 7 df $\chi^2_{.05} = 14.07$ N = 1016

The data in Table 23 summarizes the education of the two samples. The χ^2 value of that table was 131.02 and was significant at the .05 level. Higher educational levels were indicated in the nonimmunized group since the majority of subjects had twelve or more years of school. The majority of the subjects in the nonimmunized group had eleven years of school or less.

The information contained in Tables 21, 22, and 23 deals with socioeconomic variables. The fact that the immunized group had smaller families, higher incomes, and a higher educational level could possibly be accounted for by this group representing a higher socioeconomic status than the nonimmunized group. This perhaps indicates that the immunized sample had a greater concern for their health. It is a well established fact that lower socioeconomic groups have less interest in maintaining their health, because other priorities such as food, clothing, etc., take precedence.

The two groups were significantly different according to how often they sought the services of the public health center. The χ^2 value for this variable was 627.71 as shown in Table 24. The vast majority of subjects in the immunized group only went to the public health center in the case of a special vaccine program like the swine flu. However, most of the individuals in the nonimmunized group went from one to six times per year. Once again this seems to be a social

TABLE 23

RELATIONSHIP OF STUDY SAMPLES AND EDUCATION

	0	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Immunized	3	0	4	8	10	6	12	36	17	20	10	169	50	55	22	53	12	15	12
Nonimmunized	5	3	2	6	6	15	12	48	41	65	60	142	31	20	24	19	5	4	6

$\chi^2 = 131.02$ 18df $\chi^2_{.05} = 28.87$ N = 1028

Table 24

RELATIONSHIP OF STUDY SAMPLES AND ITEM 12:
HOW OFTEN DO YOU COME TO THE PUBLIC HEALTH FACILITY?

	Once or twice per year	3-6 × per year	About once per month	More often than once per month	Only in the case of a special vaccine program like the Swine flu	Never	First time in a long time	First Time
Immunized	90	20	2	0	375	0	0	0
Nonimmunized	216	123	32	4	4	48	31	29

$\chi^2 = 627.71$ 7df $\chi^2_{.05} = 14.07$ N = 974

characteristic of the two groups. It was felt that the immunized sample was seeking their other medical needs in the private sector, while the nonimmunized sample was utilizing the public health facilities for a variety of services other than immunization. Perhaps the nonimmunized group is utilizing the public health facilities only when there is an existing condition warranting medical attention, and is not using the facilities for preventive measures.

A significant difference was obtained between the two samples as to their mode of transportation in getting to the public health facility. Fewer subjects of the nonimmunized group go to and from the health center in cars and more of them ride buses, walk, or ride in taxis, while the immunized group tended to use automobiles as their sole means of transportation to the facilities. Perhaps because of the higher socioeconomic level of the immunized sample, they had greater access to personal means of transportation. This information is contained in Table 25.

TABLE 25

RELATIONSHIP OF STUDY SAMPLES AND ITEM 13:
HOW DO YOU GET TO THE PUBLIC HEALTH FACILITY?

	Walk	Car	Bus	Taxi	Other
Immunized	3	479	5	0	0
Nonimmunized	21	439	17	9	1

$\chi^2 = 31.79$ 4df $\chi^2_{.05} = 9.49$ N = 974

A χ^2 value of 22.16 with eight degrees of freedom yields a significant difference between the two groups for the variable describing chronic illnesses. Table 26 supplies this data. The frequency of chronic illnesses in the nonimmunized group was almost distributed equally for each illness. There was a high incidence of arthritis or rheumatism in the immunized group. These illnesses are usually associated with the older population and may account for the reason why the immunized group was significantly older than the nonimmunized group, especially since the elderly were strongly advised to take the vaccine.

A significant difference in the two groups existed as to whether or not they had been sick with the flu. More subjects in the immunized group had been sick with the flu at some time. Perhaps this was one motivation for taking the swine flu vaccine. This information is contained in Table 27.

A factor very close to the above mentioned variable dealt with whether or not influenza vaccines were taken yearly. Significantly more subjects in the immunized group took flu vaccines yearly. Perhaps this could be accounted for through force of habit or a traumatic experience with the flu in past histories of the immunized group. Table 28 presents the data for this variable.

Significantly more subjects in the nonimmunized group had become ill after taking other flu vaccines. Past

TABLE 26

RELATIONSHIP OF STUDY SAMPLES AND ITEM 14:
DO YOU HAVE OR HAVE YOU HAD ANY OF THE FOLLOWING CHRONIC ILLNESSES?

	Heart Disease	Cancer	Diabetes	Lung Disease	Arthritis or Rheumatism	Nervous Sys. Disease	Kidney Disease	HBP	None
Immunized	21	9	7	19	50	10	9	5	384
Nonimmunized	18	11	13	24	23	21	20	2	382

$\chi^2 = 22.16$ 8df $\chi^2_{.05} = 15.51$ N = 1028

TABLE 27

RELATIONSHIP OF STUDY SAMPLES AND ITEM 15:
HAVE YOU EVER BEEN SICK WITH ANY KIND OF FLU?

	Yes	No
Immunized	331	181
Nonimmunized	240	274

$\chi^2 = 32.78$ 1df $\chi^2_{.05} = 3.84$ N = 1026

TABLE 28

RELATIONSHIP OF STUDY SAMPLES AND ITEM 17:
DO YOU TAKE FLU VACCINES YEARLY?

	Yes	No
Immunized	91	423
Nonimmunized	32	482

$\chi^2 = 31.07$ 1df $\chi^2_{.05} = 3.84$ N = 1028

experiences and the fear of side effects from the swine flu vaccine were possible motives for those persons not being inoculated. This information is contained in Table 29.

TABLE 29

RELATIONSHIP OF STUDY SAMPLES AND ITEM 19: DID YOU GET SICK FROM TAKING OTHER FLU VACCINES?

	Yes	No
Immunized	36	478
Nonimmunized	64	450

$\chi^2 = 8.08$ 1df $\chi^2_{.05} = 3.84$ N = 1028

In the sample of nonimmunized persons, more of them were sick at the time of the interview. This is indicated in Table 30. The χ^2 value is significant at the .05 level. Possibly the people in the nonimmunized group that were sick thought the swine flu vaccine would make their illness more severe. Further, some individuals in the nonimmunized group stated their doctor had advised them not to take the vaccine because of a particular illness.

There was a significant difference in the two samples according to where they had first heard about the swine flu vaccine. These data can be seen in Table 31. About the same number of persons in each group reported to have first heard about the swine flu vaccine on television. However, more

TABLE 30

RELATIONSHIP OF STUDY SAMPLES AND ITEM 20:
ARE YOU SICK RIGHT NOW?

	Yes	No
Immunized	23	491
Nonimmunized	61	453

$\chi^2 = 17.75$ 1df $\chi^2_{.05} = 3.84$ N = 1028

TABLE 31

RELATIONSHIP OF STUDY SAMPLES AND ITEM 22:
WHERE DID YOU FIRST HEAR ABOUT THE
SWINE FLU VACCINE?

	TV	Radio	Newspaper	Magazine	Friend or Relative	Other
Immunized	341	24	117	3	17	12
Nonimmunized	364	44	70	1	17	18

$\chi^2 = 20.71$ 5df $\chi^2_{.05} = 11.07$ N = 1028

subjects in the immunized group indicated they read about the vaccine in the newspaper.

A greater number of persons in the nonimmunized group said that friends and relatives had little or no influence on their decision to be vaccinated. A χ^2 value of 55.54 was significant and the results are shown in Table 32. More of the immunized subjects said that friends and relatives had some influence to a very great deal of influence on their decision indicating that friends and relatives are influential in getting people to participate in vaccination programs. This supports the finding in the literature of the importance of peer pressure in persuading individuals to seek medical help.

Table 33 indicates that the majority of the subjects in the nonimmunized group said that they thought there was very little chance of catching the swine flu if they did not take the vaccine, perhaps showing their disbelief in the swine flu immunization program. Once again a significant difference was determined for the two groups. In speculating the possible reason for this difference, it may again be related to the attitudes of lower socioeconomic level groups concerning preventive measures, i.e., they tend to wait until they are ill before they seek medical services.

A statistically significant difference was shown for the variable presented in Table 34. Almost one-half of the

TABLE 32

RELATIONSHIP OF STUDY SAMPLES AND ITEM 23: WHAT INFLUENCE DID FRIENDS AND RELATIVES HAVE ON YOUR DECISION TO BE OR NOT BE VACCINATED?

	Little or No Influence	Some	Quite A Bit	A Great Deal	A Very Great Deal
Immunized	328	81	49	36	20
Nonimmunized	419	64	19	6	6

$\chi^2 = 55.54$ 4df $\chi^2_{.05} = 9.49$ N = 1028

TABLE 33

RELATIONSHIP OF STUDY SAMPLES AND ITEM 24:
DO YOU BELIEVE THAT YOU WILL CATCH THE SWINE
FLU IF YOU DON'T TAKE THE VACCINE?

	Very little chance	A little chance	Some chance	A great chance	A very great chance
Immunized	155	80	183	45	12
Nonimmunized	369	53	67	5	5

$\chi^2 = 181.10$ 4df $\chi^2_{.05} = 9.49$ N = 974

TABLE 34

RELATIONSHIP OF STUDY SAMPLES AND ITEM 25:
DO YOU BELIEVE THAT THE VACCINE WILL PROTECT
YOU AGAINST THE SWINE FLU?

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
Immunized	7	12	188	241	51
Nonimmunized	217	64	137	58	11

$\chi^2 = 378.18$ 4df $\chi^2_{.05} = 9.49$ N = 986

individuals in the nonimmunized sample thought that the vaccine would not protect them against the swine flu. Here they demonstrated the belief that the vaccine was not very effective.

No difference was indicated between the two samples as to whether or not they had ever taken a flu vaccine or as to whether or not they were allergic to drugs or other chemicals. In addition, no significant difference existed between the immunized and nonimmunized samples as to the number of times the subjects were sick with the flu.

There was a significant difference between the two samples as to their opinions concerning the safety of the vaccine. The nonimmunized group felt that the vaccine was not safe, while the majority of the immunized group felt it was safe to a great extent. In addition, the two samples were significantly different in their belief concerning whether they could catch the swine flu from taking the vaccine. The nonimmunized group felt that they could catch the flu from taking the vaccine while the immunized group felt the flu could not be contracted by this means. Perhaps this indicates the ineffectiveness of the mass media campaign in convincing or reaching the nonimmunized group concerning the general safety of the immunization program. The information concerning these two factors is contained in Tables 35 and 36.

TABLE 35

RELATIONSHIP OF STUDY SAMPLES AND ITEM 26:
DO YOU BELIEVE THAT THE VACCINE IS SAFE?

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
Immunized	3	10	121	261	102
Nonimmunized	258	72	105	52	8

χ^2 = 517.03 4df $\chi^2_{.05}$ = 9.49 N = 992

TABLE 36

RELATIONSHIP OF STUDY SAMPLES AND ITEM 28:
DO YOU BELIEVE YOU WILL CATCH THE FLU FROM
TAKING THE SWINE FLU VACCINE?

	Yes	No
Immunized	24	481
Nonimmunized	96	395

χ^2 = 52.66 2df $\chi^2_{.05}$ = 5.99 N = 996

A significant difference was found for the variable contained in Table 37. There were many more persons in the immunized group that said they would rather take the vaccine in pill form as opposed to a shot, indicating the possible fear of certain individuals of being immunized by injection. Perhaps a variety of mechanisms for immunizing the groups would have led to greater participation.

TABLE 37

RELATIONSHIP OF STUDY SAMPLES AND ITEM 27: IF THE VACCINE COULD BE TAKEN AS A PILL, WOULD YOU BE MORE LIKELY TO TAKE IT?

	Yes	No
Immunized	216	298
Nonimmunized	157	357

$\chi^2 = 14.72$ 1df $\chi^2_{.05} = 3.84$ N = 1028

The data contained in Table 38 illustrate that more persons in the nonimmunized group believed that they could catch the swine flu from eating pork. Again there was a significant difference in the two groups with a χ^2 value of 4.42. This indicates that the nonimmunized group was less informed about the swine flu immunization program. Here again, it seems that the mass media was ineffective in reaching the nonimmunized group and changing their attitudes concerning the program.

TABLE 38

RELATIONSHIP OF STUDY SAMPLES AND ITEM 29: DO YOU BELIEVE YOU CAN CATCH THE SWINE FLU FROM EATING PORK?

	Yes	No
Immunized	25	463
Nonimmunized	43	449

$\chi^2 = 4.42$ 1df $\chi^2_{.05} = 3.84$ N = 980

Finally, Table 39 is a summary of the data as to whether or not the subjects thought there might be a swine flu epidemic. A majority of the individuals in the nonimmunized sample thought that there was very little chance of an epidemic, although most of the persons in the immunized group thought that there was some chance or at least a little chance of an epidemic. This indicates that the immunized group was at least concerned with protection of their health and were concerned about the consequences of a swine flu epidemic.

The null hypotheses for this study were rejected since only three out of the thirty variables statistically analyzed were not significant at the .05 level of significance. All but three of the independent variables that dealt with characteristics of the subjects were significant at the .05 level. All of the independent variables that dealt with the

TABLE 39

RELATIONSHIP OF STUDY SAMPLES AND ITEM 30:
DO YOU THINK THERE MIGHT BE A SWINE FLU EPIDEMIC?

	Very little chance	A little chance	Some chance	A great chance	A very great chance
Immunized	122	100	215	51	11
Nonimmunized	296	105	89	10	4

$\chi^2 = 155.58$ 4df $\chi^2_{.05} = 9.49$ N = 1003

opinions of the subjects were significant at the .05 level. Consequently, it was felt that there were factors which significantly differentiated the immunized and nonimmunized samples.

In summary, the two groups tended to differ in socio-economic factors, attitudes, and knowledge concerning the swine flu immunization program. The immunized group seemed to be of a higher socioeconomic level; have more positive attitudes concerning the swine flu program and its importance to maintaining health; and had greater and more accurate information concerning the swine flu and the safety and efficacy of the vaccine.

In addition, the immunized group seemed to be utilizing public health facilities to a much lesser extent and for only special programs such as the swine flu vaccination program. In contrast, the nonimmunized group was utilizing the public health facilities for a wide variety of services. Perhaps indicated in this is the fact that the immunized group is utilizing the private medical sector more, and are more concerned with preventive measures than the nonimmunized group.

V. SUMMARY

Chapter IV was concerned with an analysis and interpretation of the data collected for the investigation. The chapter

was divided into five sections with Section I introducing the chapter and giving the purpose of the study.

Sections II and III were devoted to describing the immunized and nonimmunized samples by using frequencies and percentages. Each item on the questionnaire was discussed and presented in table form for the two groups.

A statistical analysis of the data was presented in Section IV. Chi Square and the t-test were the statistical tests used to determine if there was a significant difference in the immunized and nonimmunized subjects according to the questionnaire items concerning characteristics and opinions. The two hypotheses were tested at the.05 significance level and both were rejected. Finally, Section V, the last section of the chapter, was the summary.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V of this study contains three sections. A summary including the purpose, procedure, and findings of the study is presented in Section I. The second section reveals the conclusions that were drawn from the findings. Section III concludes the chapter with a list of recommendations based on the review of literature and the findings of this study.

I. SUMMARY

Purpose of the Study

The purpose of this study was to determine the differences in those persons taking and those persons not taking the swine flu vaccine according to selected characteristics and opinions.

Procedure Followed

A total of 1,028 subjects eighteen and over were interviewed at the public health centers in fifteen of the sixteen counties of the East Tennessee Development District and at the mass immunization clinic and the student union at the University of Tennessee. A questionnaire containing thirty items for the immunized sample and thirty-two items

for the nonimmunized sample was developed for use in the interview. Data obtained from the questionnaires were analyzed descriptively using frequency and percents, and statistically using Chi Square and the t-test.

Findings

The following statements summarize the findings of this study:

Immunized sample.

1. Of the 514 interviews, 40% were of males, while 60% were of females.
2. The number of White subjects interviewed totaled 96% while only 4% of the subjects were Black.
3. The ages ranged from 18 to 84, with the mean age being 39.8 years.
4. Of the 514 subjects, 88 were single, 377 married, 18 divorced, and 31 widowed.
5. The number of children of each subject ranged from 0 to 18 with the mean being 1.7 children.
6. Forty-nine percent of the subjects had a family income of $10,000 and over.
7. The mean educational level was 12.4 years.
8. The largest percentage of individuals in the sample said that they only went to the public health facility in case of a special vaccine program like the swine flu.

9. All but 2% of the sample said that they came to the public health facility in a car.
10. A total of 25% of the sample reported that they presently had or once had one or more of the chronic illnesses listed on the questionnaire.
11. A total of 64% of the sample had been sick with the flu. More than one-half of these persons had been sick only once with the flu. The mean was 1.5 times.
12. Eighteen percent of the subjects said that they took flu vaccines yearly.
13. Twenty-seven percent of the subjects had taken a flu vaccine at some time in their life. Of the 27%, 7% reported that they had gotten sick from taking other flu vaccines.
14. Four percent of the subjects said that they were sick at the time of the interview.
15. Nineteen percent of the subjects said that they were allergic to drugs or other chemicals.
16. The largest percentage of those responding reported television as the first place they heard about the swine flu vaccine.
17. The largest percentage of the subjects reported that friends and relatives had little or no influence on their decision to be vaccinated.

18. Of those responding, the largest percentage thought that there was some chance they might catch the swine flu if they did not take the vaccine.
19. Forty-seven percent of the sample believed that the vaccine would protect them to a great extent against the swine flu.
20. Five percent of the sample believed that they would catch the flu from taking the swine flu vaccine.
21. The majority of the subjects believed that the vaccine was safe to a great extent.
22. Forty-two percent of the individuals responded that they would rather take the vaccine in pill form as opposed to a shot.
23. Five percent of the sample believed that they could catch the swine flu from eating pork.
24. The largest percentage of subjects thought that there might be some chance there would be a swine flu epidemic.

Nonimmunized sample.

1. Of the 514 interviews, 27% were of males, while 73% were of females.
2. The number of White subjects interviewed totaled 89% while only 10% of the subjects were Black and 1% were of another race.

3. The ages ranged from 18 to 79, with the mean age being 32.2 years.
4. Of the 514 subjects, 95 were single, 357 married, 46 divorced, and 16 widowed.
5. The number of children of each subject ranged from 0 to 16 with the mean being 2.1 children.
6. The mean income was $4,000-4,999.
7. The mean educational level was 11.1 years.
8. The largest percentage of individuals in the sample said that they came to the public health facility at least once or twice per year.
9. Ninety percent of the sample said they came to the public health facility in a car.
10. A total of 26% of the sample reported that they presently had or once had one or more of the chronic illnesses listed on the questionnaire.
11. A total of 47% of the sample had been sick with the flu. Sixteen percent of these persons had been sick only once with the flu. The mean was 1.6 times.
12. Six percent of the subjects said that they took flu vaccines yearly.
13. Twenty-nine percent of the subjects had taken a flu vaccine at some time in their life. Of the 29%, 16% reported that they had gotten sick from taking other flu vaccines.

14. Twelve percent of the subjects said that they were sick at the time of the interview.
15. Twenty-two percent of the subjects said that they were allergic to drugs or other chemicals.
16. The largest percentage of those responding reported television as the first place they heard about the swine flu vaccine.
17. The largest percentage of the subjects reported that friends and relatives had little or no influence on their decision to not be vaccinated.
18. Of those responding, the largest percentage thought that there was very little chance they might catch the swine flu if they did not take the vaccine.
19. Forty-two percent of the sample believed that the vaccine would protect them to a very little extent against the swine flu.
20. Nineteen percent of the sample believed that they would catch the flu from taking the swine flu vaccine.
21. The majority of the subjects believed that the vaccine was safe to a very little extent.
22. Thirty-one percent of the individuals responded that they would rather take the vaccine in pill form as opposed to a shot.

23. Eight percent of the sample believed they could catch the swine flu from eating pork.
24. The largest percentage of subjects thought that there was very little chance there would be a swine flu epidemic.

Differences in the immunized and nonimmunized samples.

1. Hypothesis one, that there would be no significant differences in selected characteristics of those persons taking and those persons not taking the swine flu vaccine, was rejected. Only three of the items on the questionnaire dealing with the characteristics of the subjects were not significant at the .05 level. There was a significant difference at the .05 level between the two groups for all of the other items dealing with selected characteristics of the subjects.
2. Hypothesis two, that there would be no significant differences in the opinions of those persons taking and those persons not taking the swine flu vaccine, was rejected. There was a significant difference at the .05 level between the two groups for all of the items dealing with the opinions of the subjects.

II. CONCLUSIONS

The following conclusions were drawn from the findings concerning the immunized and nonimmunized samples:

1. A significantly higher percentage of men were immunized while a significantly higher percentage of women were found in the nonimmunized group.
2. The nonimmunized group was significantly younger in age composition reflected in the mean age of the two groups possibly indicating the reason for there being more single persons in this group.
3. The fact that the immunized group was significantly older in age composition reflected in the mean age of the two groups indicates that this group was more conscientious about their health status. In addition, the mass media encouraged those over age fifty-five and more particularly the elderly, to take the swine flu vaccine.
4. The immunized group had smaller families, higher incomes, and a higher educational level representing a higher socioeconomic status than the nonimmunized group.
5. Subjects in the immunized group, having a higher socioeconomic status, revealed a greater concern for their health.

6. The immunized sample seemed to be seeking their other medical needs in the private sector, while the nonimmunized sample was utilizing the public health facilities more often and for a variety of reasons other than immunization.
7. The nonimmunized group utilized the public health center's services only when there was an existing condition warranting medical attention and not for preventive measures.
8. The immunized group tended to use automobiles as their sole means of transportation to the public health center perhaps exhibiting the fact that they had a higher income level and thus greater access to a personal means of transportation.
9. There was a high incidence of arthritis or rheumatism in the immunized group possibly accounting for the reason why this group was older since these illnesses are usually associated with the older population. In addition, the elderly and chronically ill were strongly advised to take the vaccine.
10. More of the subjects in the immunized group had been sick with the flu at some time and perhaps this was one of their reasons for taking the swine flu vaccine.

11. Significantly more subjects in the immunized group took flu vaccines yearly. Perhaps this could be accounted for through force of habit or a traumatic experience with the flu in past histories of the immunized group.
12. Significantly more subjects in the nonimmunized group had become ill after taking other flu vaccines. Past experiences and the fear of side effects from the swine flu vaccine were possible motives for those persons not being inoculated.
13. More persons in the nonimmunized sample were sick at the time of the interview and possibly they thought the swine flu vaccine would make their illness more severe. Further, some individuals in the nonimmunized group stated their doctor had advised them not to take the vaccine because of a particular illness.
14. Friends and relatives seemed to have more influence on the immunized group as to their decision to be vaccinated indicating the importance of peer pressure in persuading individuals to seek medical help.
15. The nonimmunized group thought that there was very little chance of catching the swine flu if they did not take the vaccine, perhaps showing their disbelief in the swine flu immunization program.

16. Almost one-half of the individuals in the nonimmunized sample thought that the vaccine would not protect them against the swine flu demonstrating their disbelief in the efficacy of the vaccine.
17. Many of the nonimmunized subjects felt that the vaccine was not safe and believed they could catch the swine flu from taking the vaccine. Perhaps this indicates the ineffectiveness of the mass media campaign in convincing or reaching the non-immunized group concerning the general safety of the immunization program.
18. Several individuals in the nonimmunized sample seemed to fear taking the vaccine by injection.
19. More persons in the nonimmunized group believed that they could catch the swine flu from eating pork, again indicating that the mass media was ineffective in informing the nonimmunized group.
20. The fact that more persons in the immunized group seemed to think that there would be a swine flu epidemic accounts for their being more concerned with protection of their health.
21. The majority of the individuals in the nonimmunized group had made their decision not to take the swine flu vaccine before the program was cancelled. Their explanations for not taking the swine flu

vaccine relate closely to the conclusions of the variables aforementioned.

III. RECOMMENDATIONS

The following recommendations were derived from the findings of this study and the review of literature:

1. Local leaders should promote and implement immunization campaigns.
2. Local mass media should be the primary means of informing the public of the need for the immunization program and should be responsible for relating valid information to the public.
3. Local leaders and the mass media should focus on reaching the lower socioeconomic groups of people especially encouraging preventive health measures and changing their attitudes concerning immunization programs.
4. During immunization programs, the vaccine should not only be made available but widely accessible to those who would like to take it. This may be accomplished by establishing clinic locations and times to meet the convenience of the persons being immunized.
5. Further research should be conducted to determine other differences in characteristics and opinions of immunized and nonimmunized groups.

6. The questionnaire utilized in this study should be amended and administered to people in other parts of the country to determine if the characteristics and opinions found in this study are similar to those of persons participating in other immunization campaigns. The instrument should also be administered to other persons besides those using public health facilities.
7. A variety of mechanisms should be used in inoculating the people. The vaccine might be available in pill form, on a sugar cube, or in drops to be taken orally. Some clinics might also have available jet injection guns as well as needles and syringes.

CHAPTER VI

EPILOGUE

The findings and conclusions of this research indicate that there are significant differences in the characteristics and opinions of individuals who participate in immunization programs as opposed to those who do not. Several specific reasons for these differences have been determined from this study.

People who do not participate in vaccination programs tend to believe that they are not susceptible to a particular disease or believe that the disease would not be severe if contracted. They may also believe that vaccines are not safe or effective. Social factors of pressure and convenience are significant in guiding their decision of whether or not to be vaccinated. People of the lower socioeconomic strata usually lack the knowledge and motivation to participate in vaccination programs.

The immunized population is usually characterized by higher age, education, and income levels, as well as smaller families, while the nonimmunized population's characteristics are at the other extreme. Families of higher occupational-educational levels seem to more readily obtain information disseminated in the mass media. They read more and consult more with medical and nonmedical sources about vaccines and

are better informed about the nature of the vaccine trials. Nevertheless, on occasion some people who know a great deal about the vaccine fail to take advantage of it because of a lack of positive guidance to a clinic or physician's office for inoculation.

Although many of the conclusions of this study are much like those of comparable studies, there are still some major differences. These differences are due to a vaccination campaign more massive and intensive than any other vaccine program ever attempted in the United States. It would be unfair to conclude this study without alluding to the many snags of the swine flu immunization program of 1976 which were influential in keeping many people from taking the swine flu vaccine.

It was easy enough for President Ford to convince Congress to appropriate the necessary $135 million to produce the swine flu vaccine but this only began a series of problems that plagued the program throughout its entirety. The first complication occurred when one of the four drug manufacturers inexplicably produced a million doses of the wrong vaccine. Then for awhile all the manufacturers quit producing the vaccine while arrangements were made for insuring them against malpractice suits.

Several medical scientists seemed to think the whole program was ridiculous since they did not see any danger from

swine flu in the United States during the flu season of 1976-77. To explain to the people of the United States that there indeed might not be an epidemic but then again there was a good chance there might be was an enormous task assumed by the mass media. News reports had to convince the American people it was better to be safe than sorry.

All these elements combined to place the schedule of the manufacturing and packaging of the swine flu vaccine far behind. Only about a quarter of the vaccine was available by October 1, 1976, when the mass inoculations were begun. At the beginning of the mass vaccine campaign, several deaths occurred shortly after people had been immunized against the swine flu. This helped to make up the minds of many who at the time were considering taking the vaccine. The deaths along with the side effects, although slight, received enough publicity to convince many people not to be inoculated.

The last major snag came when the swine flu immunization program was cancelled because of reports of the Guillain-Barré syndrome being linked to the swine flu vaccine and other influenza vaccines. Many lawsuits were filed against the Federal Government because of this rare form of paralysis.

The swine flu epidemic that was expected to cause many deaths and serious illnesses did not occur. At the present time the greatest concern of public health leaders is that the swine flu vaccine campaign may have caused preventive

medicine to lag in such areas of communicable disease as polio and measles which were already low in the percentage of children vaccinated.

Can a similar effort against other epidemics ever be mounted in the future? Preventive measures are so important in improving the health of the United States that it is tragic to think that the public may now believe that all vaccines are bad.

The United States Department of Health, Education, and Welfare now concedes that the decision for such a sudden and massive prevention program was made too hastily and that consultants from outside the medical community should have been contacted for their opinions. Consumers believe that the immunization program should not have been decided by a group of medical experts alone but should have been placed into the public arena for debate since the risks of the vaccine were concluded to outweigh the benefits of protection from the disease.

The ups and downs of the swine flu immunization campaign definitely had a derogatory influence on the opinions of many people concerning the swine flu vaccine and other vaccines. Even so, many times the decision not to be immunized came from an inadequate health education background.

In looking at the conclusions of this study, it seems reasonable to suggest that a considerable increased effort

should be devoted to health education in the future. This health education should start early in life when children develop behavior which will affect their health. It is much more productive to create healthy habits and practices than to attempt to change them once they are firmly established.

Methods of health education depend most heavily on communication whether interpersonal, by mass media, or by some other means. Communication is one of the most effective and most easily applied means to influence knowledge, attitudes, and motivations, considered to be the critical determinants of health behavior. Physicians, nurses, pharmacists, and others should become genuinely interested in taking an active part in patient and community health education. Lay health workers should be used increasingly in health education since they often function as more effective educators of their peers than professionals.

The health educator's efforts to create desirable behaviors are often neutralized by a host of factors such as poverty, racial and social discrimination, and a lack of preventive health services. Even so, professional health education must become more effective in producing actual behavioral changes instead of only imparting health facts. Health educators must address themselves to all the factors that determine people's actions, persuading people to act wisely and change certain social conditions so they can take

the actions on which we have sold them. In order to do this, health educators will have to get involved in political, economic, social, and legal affairs at the local, state, and national levels where policies are shaped and decisions made such as the decision to have a nationwide immunization program for swine flu.

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APPENDICES

APPENDIX A

CRITERIA ON THE FRAMING AND ORDERING OF QUESTIONS BY VAN DALEN

CRITERIA ON THE FRAMING AND ORDERING

OF QUESTIONS BY VAN DALEN

Framing of Questions. Has the researcher thoroughly explored his hypotheses, experiences, the literature, and other questionnaires so as to frame questions that probe the crucial issues in depth? Has he allocated the number of questions that probe the crucial issues in depth? Has he allocated the number of questions in accordance with the cruciality of the issue? Has he checked all questions for unnecessary repetition and redundancy? In determining the length of the questionnaire, has he given consideration to the amount of time that will be required to answer the questionnaire and the cost of preparing and mailing it? Are the questions stated in crystal-clear, simple language and focused sharply on specific points? Are subordinate questions asked or is an exhaustive list of alternative choices provided so as to explore various aspects of a decision and to probe beneath vague, stereotyped, "don't know," or evasive answers? Are questions framed to elicit unambiguous answers (if possible, quantified answers—number of times per week rather than "sometimes," "often," or "always")?

Ordering of Questions. Are items placed in a psychologically or logically sound sequence—simple, interesting, neutral questions preceding more difficult, crucial, or personal ones and those that establish a frame of reference or provide keys to recall before those asking for details? Is a smooth transition made from one group of questions to the next?

APPENDIX B

FINAL DRAFT OF THE QUESTIONNAIRE

CHARACTERISTIC AND OPINION QUESTIONNAIRE
OF INDIVIDUALS TAKING AND NOT TAKING THE
SWINE FLU VACCINE

For U.T. only -
Student ☐
Faculty ☐
Staff ☐

Immunized
☐ Yes (1) ☐ No (2) (1)

Name of Site Visited _____

Address of Site _____

Directions for Interviewers: Please mark the correct response by placing a check mark ☑ in the appropriate box. Ignore the numbers in parentheses; their purpose is for computer coding only.

Number ☐☐☐☐ (2-5)

Sex ☐ Male (1) ☐ Female (2) (6)

Race ☐ White (1) ☐ Black (2) ☐ Other (3) (7)

Age ☐☐ Years (8-9)

Marital Status ☐ Single (1) ☐ Married (2) ☐ Divorced (3) ☐ Widowed (4) (10)

Family Size ☐☐ No. of Children (11-12)

Income (29)
☐ Less than $2,000 (1)
☐ $2,000-2,999 (2)
☐ $3,000-3,999 (3)
☐ $4,000-4,999 (4)
☐ $5,000-6,999 (5)
☐ $7,000-9,999 (6)
☐ $10,000-14,999 (7)
☐ $15,000 & over (8)
(13)

Page 2
No.

Education (Check last year of school completed.)

Elementary	☐ 1 (1)	☐ 2 (2)	☐ 3 (3)	☐ 4 (4)	☐ 5 (5)	☐ 6 (6)
Jr. High	☐ 1 (7)	☐ 2 (8)				
High School	☐ 1 (9)	☐ 2 (10)	☐ 3 (11)	☐ 4 (12)		
College	☐ 1 (13)	☐ 2 (14)	☐ 3 (15)	☐ 4 (16)		
Graduate School	☐ 1 (17)	☐ 2 (18)	☐ 3 (19)	☐ None (20)		

(14)

How often do you come to the public health facility?

☐ Once or twice per year (1)
☐ 3-6 times per year (2)
☐ About once per month (3)
☐ More often than once per month (4)
☐ Only in the case of a special vaccine program like the Swine flu (5)
☐ Never (6)

(15)

How do you get to the public health facility?

☐ Walk (1) ☐ Car (2) ☐ Bus (3) ☐ Taxi (4) ☐ Other (5)

☐ First time in a long time (7)
☐ First time (8)

(16)

Do you have or have you had any of the following chronic illnesses?

☐ Heart Disease (1) ☐ Cancer (2) ☐ Diabetes (3) ☐ Lung Disease (4) ☐ Arthritis or Rheumatism (5)
☐ Nervous System Disease (6) ☐ Kidney Disease (7) ☐ HBP (8) ☐ None (9)

(17)

Have you ever been sick with any kind of flu? ☐ Yes (1) ☐ No (2) (18)

How many times have you been sick with the flu? ☐☐ No. of Times (19-20)

Do you take flu vaccines yearly? ☐ Yes (1) ☐ No (2) (21)

Have you ever taken a flu vaccine? Yes (1) ☐ No (2) ☐

Did you get sick from taking other flu vaccines? ☐ Yes (1) ☐ No (2) (22)

Are you sick right now? ☐ Yes (1) ☐ No (2) (23)

Are you allergic to drugs or other chemicals? ☐ Yes (1) ☐ No (2) (24)

Where did you first hear about the Swine flu vaccine?

☐ Television (1) ☐ Radio (2) ☐ Newspaper (3) ☐ Magazine (4) ☐ Friend or Relative (5) ☐ Other (6) (25)

What influence did friends and relatives have on your decision to be or not be vaccinated?

☐ Little or no influence (1) ☐ Some (2) ☐ Quite a bit (3) ☐ A great deal (4) ☐ A very great deal (5) (26)

Do you believe that you will catch the Swine flu if you don't take the vaccine?

☐ Very little chance (1) ☐ A little chance (2) ☐ Some chance (3) ☐ A great chance (4) ☐ A very great chance (5) (27)

Do you believe that the vaccine will protect you against the Swine flu?

☐ To a very little extent (1) ☐ To a little extent (2) ☐ To some extent (3) ☐ To a great extent (4) ☐ To a very great extent (5) (28)

Do you believe that the vaccine is safe?

☐ To a very little extent (1) ☐ To a little extent (2) ☐ To some extent (3)

☐ To a great extent (4) ☐ To a very great extent (5) (29)

If the vaccine could be taken as a pill, would you be more likely to take it?

☐ Yes (1) ☐ No (2) (30)

Do you believe you will catch the flu from taking the Swine flu vaccine?

☐ Yes (1) ☐ No (2) (31)

Do you believe you can catch the Swine flu from eating pork?

☐ Yes (1) ☐ No (2) (32)

Do you think there might be a Swine flu epidemic?

☐ Very little chance (1) ☐ A little chance (2) ☐ Some chance (3)

☐ A great chance (4) ☐ A very great chance (5) (33)

*Had you already decided not to take the vaccine prior to the program being cancelled?

*Why did you not take the vaccine?

*These two extra questions were added after the swine flu immunization program was cancelled and before beginning to interview the nonimmunized group.

APPENDIX C

MAJOR POINTS OF THE ESSENTIALS OF GOOD INTERVIEWING

MAJOR POINTS OF THE ESSENTIALS

OF GOOD INTERVIEWING

You must be:

1. Completely honest in your work.
2. Reliable and conscientious.
3. Utterly objective in your manner of asking questions.
4. Faithful and neutral in recording answers.
5. Willing to write answers fully and legibly.
6. Interested in people; understanding.
7. Able to inspire people's confidence and put them at ease.
8. Inconspicuously, but neatly dressed.

Be sure to:

1. Study all questions until you know what they mean and are familiar enough with them so you can really ask the questions instead of blindly reading them.

2. Interview yourself by answering each question thoughtfully. Then interview someone else, for practice. Of course, these interviews are not counted as part of the assigned interviews you turn in.

3. Plan to interview at various times of day between 9 a.m. and 9 p.m., since different kinds of people (workingmen, housewives, executives) are home at different hours.

4. Re-read your instructions between interviews—you may pick up points you missed before or correct errors you have begun to make.

Your attitude should be:

1. Neutral
2. Impartial
3. Casual
4. Conversational
5. Friendly

APPENDIX D

FORMS USED DURING THE SWINE FLU IMMUNIZATION CAMPAIGN

Important Information from the U.S. Public Health Service about Swine Flu and Victoria Flu Vaccines

INTRODUCTION

You probably have heard a good deal about swine flu and swine flu vaccine. You may know, for example, that swine flu caused an outbreak of several hundred cases at Ft. Dix, New Jersey, early in 1976—and that before then swine flu had not caused outbreaks among people since the 1920's.

With the vast majority of Americans being susceptible to swine flu, it is possible that there could be an epidemic this winter. No one can say for sure. However, if an epidemic were to break out, millions of people could get sick. Therefore, a special swine flu vaccine has been prepared and tested which should protect most people who receive it.

Certain people, such as those with chronic medical problems and the elderly, need annual protection against flu. Therefore, besides protection against swine flu, they also need protection against another type of flu (Victoria flu) that was around last winter and could occur again this winter. A separate vaccine has been prepared to give them protection against both types of flu.

These vaccines have been field tested and shown to produce very few side effects. Some people who receive the vaccine had fever and soreness during the first day or two after vaccination. These tests and past experience with other flu vaccines indicate that anything more severe than this would be highly unlikely.

Many people ask questions about flu vaccination during pregnancy. An advisory committee of the Public Health Service examined this question and reported that "there are no data specifically to contraindicate vaccination with the available killed virus vaccine in pregnancy. Women who are pregnant should be considered as having essentially the same balance of benefits and risks regarding influenza vaccination and influenza as the general population."

As indicated, some individuals will develop fever and soreness after vaccination. If you have more severe symptoms or if you have fever which lasts longer than a couple of days after vaccination, please consult your doctor or a health worker wherever you receive medical care.

While there is no reason to expect more serious reactions to this flu vaccination, persons who believe that they have been injured by this vaccination may have a claim. The Congress recently passed a law providing that such claims, with certain exceptions, may be filed only against the United States Government. Information regarding the filing of claims may be obtained by writing to the U.S. Public Health Service Claims Office, Parklawn Building, 5600 Fishers Lane, Rockville, Maryland 20852.

Attached is more information about flu and flu vaccine. Please take the time to read it carefully. You will be asked to sign a form indicating that you understand this information and that you consent to vaccination.

IMPORTANT INFORMATION ABOUT SWINE AND VICTORIA INFLUENZA (FLU) VACCINE (BIVALENT)

July 15, 1976

The Disease

Influenza (flu) is caused by viruses. When people get flu they may have fever, chills, headache, dry cough or muscle aches. Illness may last several days or a week or more, and complete recovery is usual. However, complications may lead to pneumonia or death in some people. For the elderly and people with diabetes or heart, lung, or kidney diseases, flu may be especially serious.

It is unlikely that you have adequate protection against swine flu, since it has not caused widespread human outbreaks in the past 45 years. You may or may not have adequate protection against Victoria flu, although many Americans had this flu last winter. It was responsible for over 12,000 deaths.

The Vaccine

The vaccine will not give you flu because it is made from killed viruses. Today's flu vaccines cause fewer side effects than those used in the past. In contrast with some other vaccines, flu vaccine can be taken safely during pregnancy.

One shot will protect most people from swine and Victoria flu during the next flu season; however, either a second shot or a different dosage may be required for persons under age 25. If you are under 25 and a notice regarding such information is not attached, this information will be provided to you wherever you receive the vaccine.

Possible Vaccine Side Effects

Most people will have no side effects from the vaccine. However, tenderness at the site of the shot may occur and last for several days. Some people will also have fever, chills, headache, or muscle aches within the first 48 hours.

Special Precautions

As with any vaccine or drug, the possibility of severe or potentially fatal reactions exists. However, flu vaccine has rarely been associated with severe or fatal reactions. In some instances people receiving vaccine have had allergic reactions. You should note very carefully the following precautions:

- Children under a certain age should not routinely receive flu vaccine. Please ask about age limitations if this information is not attached.
- People with known allergy to eggs should receive the vaccine only under special medical supervision.
- People with fever should delay getting vaccinated until the fever is gone.
- People who have received another type of vaccine in the past 14 days should consult a physician before taking the flu vaccine.

If you have any questions about flu or flu vaccine, please ask.

*USGPO: 1976 — 216-225

REGISTRATION FORM

I have read the above statement about swine and Victoria flu, the vaccine, and the special precautions. I have had an opportunity to ask questions, including questions regarding vaccination recommendations for persons under age 25, and understand the benefits and risks of flu vaccination. I request that it be given to me or to the person named below of whom I am the parent or guardian.

INFORMATION ON PERSON TO RECEIVE VACCINE		
Name (Please Print)	Birthdate	Age
Address	County of Residence	

FOR CLINIC USE
Clinic Ident.
Date Vaccinated
Manufacturer and Lot No.

Signature of person to receive vaccine or Parent or Guardian — Date

CDC 7.37
7-76
U.S. Department of Health, Education, and Welfare / Public Health Service / Center for Disease Control / Atlanta, Georgia 30333

IMPORTANT INFORMATION ABOUT SWINE INFLUENZA (FLU) VACCINE (MONOVALENT)

July 15, 1976

The Disease

Influenza (flu) is caused by viruses. When people get flu they may have fever, chills, headache, dry cough or muscle aches. Illness may last several days or a week or more, and complete recovery is usual. However, complications may lead to pneumonia or death in some people. For the elderly and people with diabetes or heart, lung, or kidney diseases, flu may be especially serious.

It is unlikely that you have adequate natural protection against swine flu, since it has not caused widespread human outbreaks in 45 years.

The Vaccine

The vaccine will not give you flu because it is made from killed viruses. Today's flu vaccines cause fewer side effects than those used in the past. In contrast with some other vaccines, flu vaccine can be taken safely during pregnancy.

One shot will protect most people from swine flu during the next flu season; however, either a second shot or a different dosage may be required for persons under age 25. If you are under 25 and a notice regarding such information is not attached, this information will be provided to you wherever you receive the vaccine.

Possible Vaccine Side Effects

Most people will have no side effects from the vaccine. However, tenderness at the site of the shot may occur and last for several days. Some people will also have fever, chills, headache, or muscle aches within the first 48 hours.

Special Precautions

As with any vaccine or drug, the possibility of severe or potentially fatal reactions exists. However, flu vaccine has rarely been associated with severe or fatal reactions. In some instances people receiving vaccine have had allergic reactions. You should note very carefully the following precautions:

- Children under a certain age should not routinely receive flu vaccine. Please ask about age limitations if this information is not attached.
- People with known allergy to eggs should receive the vaccine only under special medical supervision.
- People with fever should delay getting vaccinated until the fever is gone.
- People who have received another type of vaccine in the past 14 days should consult a physician before taking the flu vaccine.

If you have any questions about flu or flu vaccine, please ask.

REGISTRATION FORM

I have read the above statement about swine flu, the vaccine, and the special precautions. I have had an opportunity to ask questions, including questions regarding vaccination recommendations for persons under age 25, and understand the benefits and risks of flu vaccination. I request that it be given to me or to the person named below of whom I am the parent or guardian.

INFORMATION ON PERSON TO RECEIVE VACCINE		
Name (Please Print)	Birthdate	Age
Address	County of Residence	

FOR CLINIC USE
Clinic Ident.
Date Vaccinated
Manufacturer and Lot No.

Signature of person to receive vaccine or Parent or Guardian _____ Date _____

COC 7.31
7-76
U.S. Department of Health, Education, and Welfare / Public Health Service / Center for Disease Control / Atlanta, Georgia 30333

SWINE INFLUENZA RECORD AND INFORMATION

YOU HAVE RECEIVED A SWINE FLU SHOT.

Many persons receiving flu shots experience some fever, chills, headaches, and muscle aches within the first 48 hours. Sometimes tenderness, redness, and some swelling of the arm may be noticed for a few days. These reactions are often helped by aspirin. Persons who have reactions to aspirin may substitute Acetaminophen (such as Datril, Tylenol). Neither of these medicines require a prescription and all should be taken strictly according to the directions on the package. When fever is present, additional liquids such as sweetened tea can be helpful.

Immunization protection against Polio, Measles, Rubella, Diphtheria, Pertussis, Tetanus and Mumps is available too. Check with your doctor or local health department for more information.

You will want to add your name (or the name of the person receiving the flu shot) and today's date to this paper. Please keep this paper for your own records.

NAME OF PERSON IMMUNIZED _____ DATE _____

PHLH Form No. 36.60

SWINE AND A-VICTORIA INFLUENZA RECORD AND INFORMATION

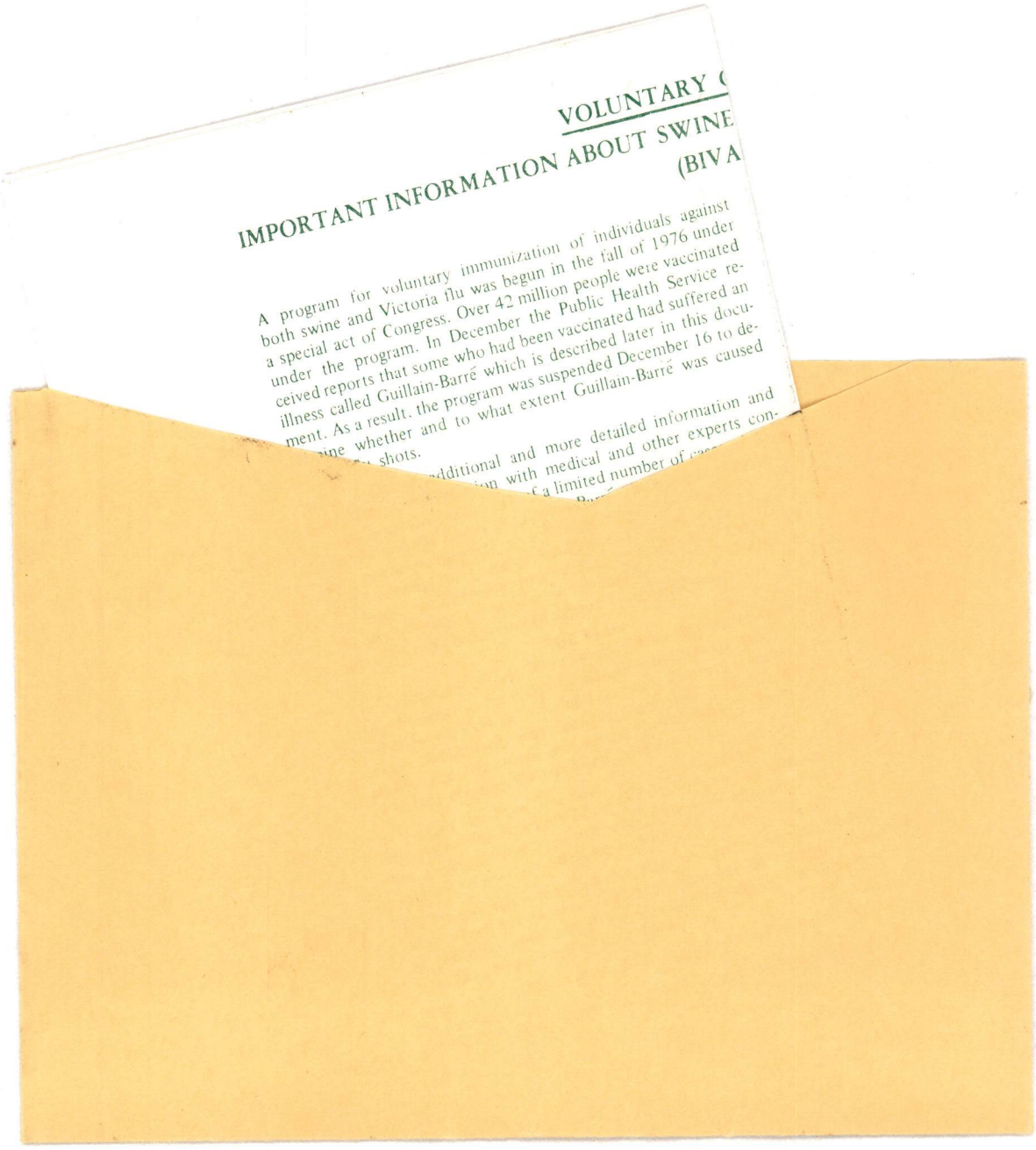
YOU HAVE RECEIVED A COMBINED SWINE FLU AND A-VICTORIA FLU SHOT.

Many persons receiving flu shots experience some fever, chills, headaches, and muscle aches within the first 48 hours. Sometimes tenderness, redness, and some swelling of the arm may be noticed for a few days. These reactions are often helped by aspirin. Persons who have reactions to aspirin may substitute Acetaminophen (such as Datril, Tylenol). Neither of these medicines require a prescription and all should be taken strictly according to the directions on the package. When fever is present, additional liquids such as sweetened tea can be helpful.

You will want to add your name (or the name of the person receiving the flu shot) and today's date to this paper. Please keep this paper for your own records.

NAME OF PERSON IMMUNIZED _____ DATE _____

PHLH Form No. 36.61



VOLUNTARY (

IMPORTANT INFORMATION ABOUT SWINE

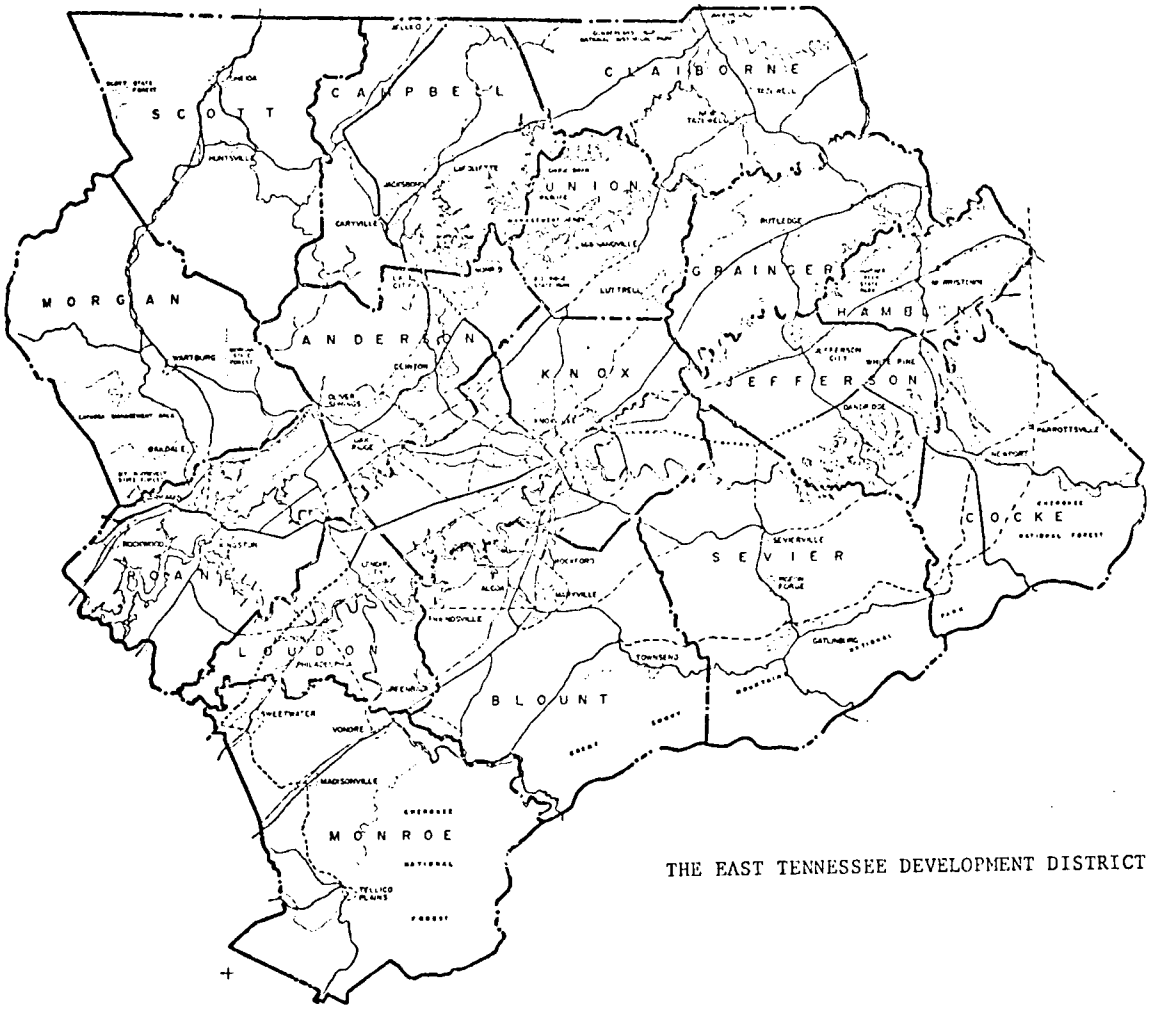
(BIVA

A program for voluntary immunization of individuals against both swine and Victoria flu was begun in the fall of 1976 under a special act of Congress. Over 42 million people were vaccinated under the program. In December the Public Health Service received reports that some who had been vaccinated had suffered an illness called Guillain-Barré which is described later in this document. As a result, the program was suspended December 16 to de-
...ine whether and to what extent Guillain-Barré was caused
... shots.

...dditional and more detailed information and
...on with medical and other experts con-
...f a limited number of ...

APPENDIX E

MAP OF THE EAST TENNESSEE DEVELOPMENT DISTRICT



THE EAST TENNESSEE DEVELOPMENT DISTRICT

APPENDIX F

FIGURES

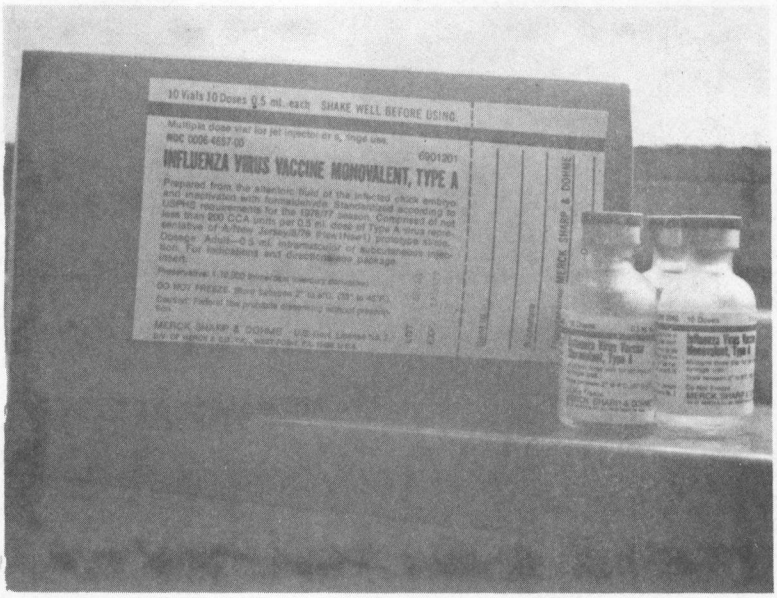


Figure 1. Swine flu vaccine monovalent, Type A.

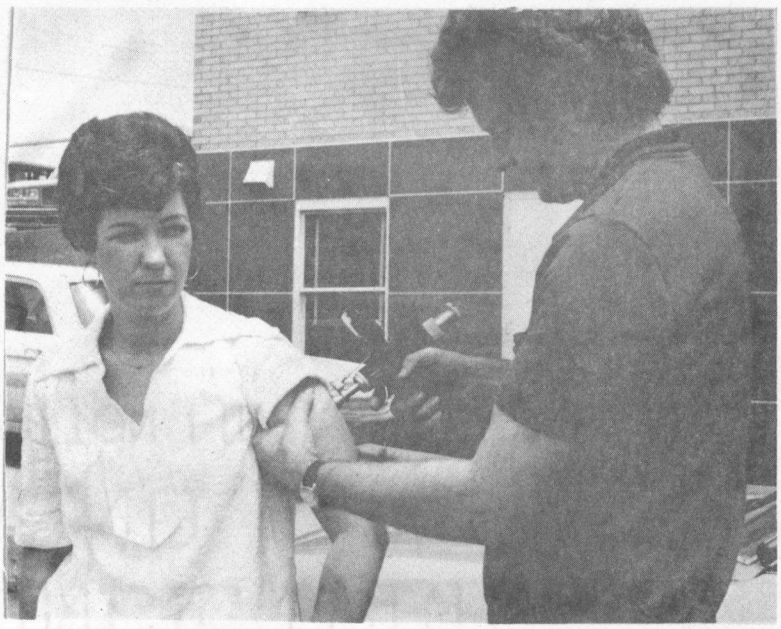
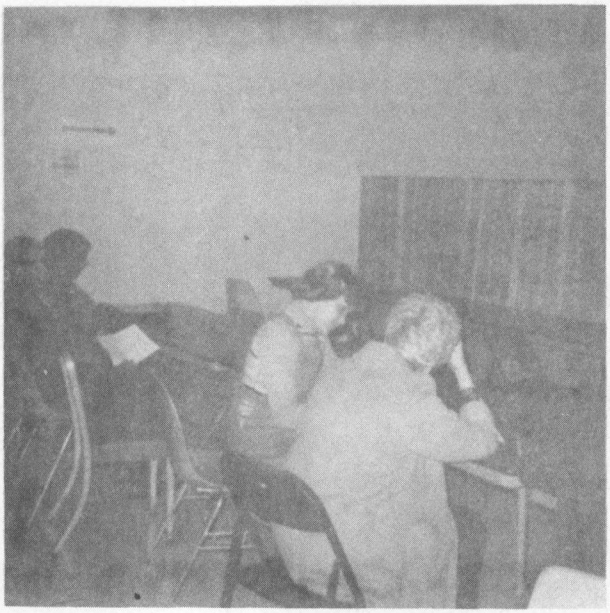
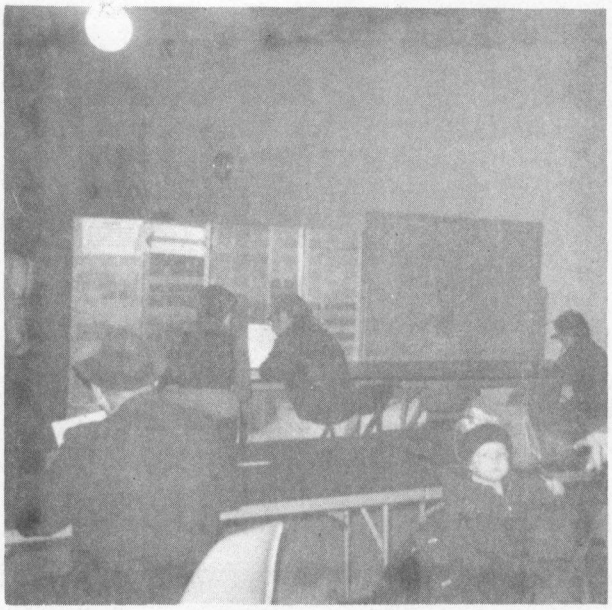


Figure 2. Hilda Guthrie receives a swine flu shot with the jet injection gun from Jim Fowlkes.



(a)



(b)

Figure 3. Subjects being interviewed in the county health centers.

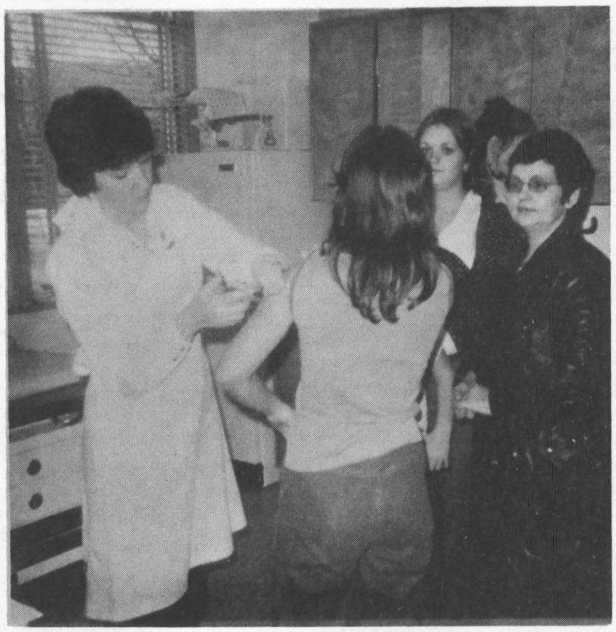


(a)



(b)

Figure 4. People completing Informed Consent Forms for taking the swine flu vaccine.



(a)



(b)

Figure 5. People receiving swine flu shots with needles and syringes.

VITA

Hilda Jeanette Guthrie was born in Birmingham, Alabama, on July 21, 1946. She attended Jones Valley Elementary and High School in Birmingham and graduated in 1964.

She received a Bachelor of Science degree with a major in elementary education in 1968 from Lee College, Cleveland, Tennessee. The Master of Arts degree in health, physical education, and recreation was received from the University of Alabama, Tuscaloosa, in 1970.

She was employed as an elementary-junior high physical education and health teacher at Allen School in Cleveland, Tennessee, as an instructor of health, physical education, and recreation at Stillman College in Tuscaloosa, Alabama, and as an instructor of health and safety at the University of Southern Mississippi, Hattiesburg.

She began the doctoral program in September, 1974, at the University of Tennessee, Knoxville, working as a teaching assistant for two years and then as a full-time instructor for one year, and received the Doctor of Philosophy degree with a major in public health education and a collateral in food science in August, 1977.

The author is a member of the American Public Health Association, the American Alliance of Health, Physical Education, and Recreation, and the American School Health Association.