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This is a biostatistical study of 1827 Department of State employees and their dependents at the Moscow Embassy and 2561 employees and their dependents from other Eastern European Embassies. Health records, health questionnaires and death certificates were the basic information sources. The study is the impact of the Moscow environment including microwave exposure on the health status and mortality of the employees. It was concluded that personnel working at the American Embassy in Moscow from 1953 to 1976 suffered no ill effects from the microwaves beamed at the Chancery.

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TO: Office of Medical Services
Department of State
Washington, D.C.

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PREFACE

This report covers all aspects of the Foreign Service Health Status Study. It describes the origin and purpose of the study, the design and organization of the project, the methods used to collect and analyze the data, and presents the final results of the survey. It also includes an appendix consisting of all the forms and codes used during the study.

This report represents the contributions, the cooperative effort, and the dedication of many individuals and agencies. The dimensions and scope of the study were perhaps somewhat vague at the beginning but this proved no deterrent to its successful completion. At times practical circumstances forced some deviation from the general course of the study and on many occasions difficult decisions had to be made, but this was always accepted by the operational staff.

It would not be possible to evaluate or judge the importance of any single person's or group's role in the project. This study has extended over a two-year period and many people, some for only a short period of time and others during the entire study period, have enthusiastically given of their talents and energy during these years. We are indeed very grateful and want to express our appreciation and thanks to everyone for their assistance and willingness to share in this massive effort. The names of those who have served on the study staff are listed in Appendix 1.

Finally, we would like to express our gratitude to all of the Foreign Service active and inactive personnel and their dependents for their patience, understanding and cooperation in responding to our correspondence, questionnaires and phone calls. We are most grateful for their many suggestions, criticisms and encouragement. Without their continued interest and support we would not have been able to complete our project.

Foreign Service Health Status Study

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SECTION 1 - DESCRIPTION OF THE STUDY

INTRODUCTION

In May and June of 1976, preliminary planning and discussion sessions were held between members of the staff of the Department of State, including Drs. William Watson and Herbert Pollack, and Dr. Abraham Lilienfeld, of the Johns Hopkins School of Hygiene and Public Health, regarding the conduct of a study of the possible effects on mortality and morbidity due to exposure to microwaves among U.S. Government employees at the American Embassy in Moscow. On June 21, 1976, a contract was awarded to Dr. Lilienfeld to conduct such a study. The study was initiated immediately following the signing of the contract at the end of June.

The major objective of the study was to compare the morbidity and mortality experience of Foreign Service employees and those from other government agencies who had served in the Moscow Embassy during the period 1953 to 1976, with employees who had served in other selected Eastern European embassies or consulates, during the same period of time. The reasons for selecting these posts for comparison was their relative similarity to Moscow in climate, diet, geographic location, disease problems, and general social milieu. The embassies or consulates selected for comparison were in Budapest, Leningrad, Prague, Warsaw, Belgrade, Bucharest, Sofia, and Zagreb. It was expected that during 1953 to 1976 there had been approximately 3,500 American employees and dependents at the Moscow Embassy.

The eight selected embassies or consulates were expected to provide approximately twice the number of employees in Moscow. A major reason for selecting a comparison or control group that could potentially provide almost twice as many employees as had served in Moscow was that the

cooperation of control participants was not expected to be the same as that of those who were in Moscow.

At all of the selected posts the employees were from a number of government agencies besides the Department of State: the United States Information Agency (USIA), the Foreign Agriculture Service (FAS), the Defense Department (Army, Navy, Air Force, Marine Security Guard (MSG)), Department of Defense civilians, and several individual employees for special assignments by other agencies of the United States Government.

Microwave Exposure

The microwave exposure at the Moscow Embassy varied during this period of time. The direction and intensity of the source of the microwaves changed in 1975 but it was always directed toward the upper floors of the chancery. The following is the maximum exposure and exposed areas by time period:

	Time Period	Exposed Area of Chancery	Maximum Exposure
1.	1953 to May, 1975	West Facade	Maximum of 5 microwatts per cm^2, 9 hours per day.
2.	June, 1975 to Feb. 7, 1976	South & East Facade	15 microwatts per cm^2, 18 hours per day.
3.	Since Feb. 7, 1976	South & East Facade	Fractions of a microwatt per cm^2 18 hours per day.

The sources of radiation beams at the Moscow Embassy were identified using directional antennas and conventional receivers and power meters at various locations within the Embassy. Appendix 11 shows the basic documents provided by the State Department for determining exposure according to time period, living and working areas. Appendix 11 also contains additional information on characteristics of the microwave field provided by the State Department after completion of the study.

Relative power levels and operating times of the original signal from

the west were recorded nearly continuously from early 1963 using a microwave antenna, a detector, an amplifier, and a strip chart recorder. The frequencies were often verified using conventional receivers. Absolute power levels were checked using suitable antennas with either calibrated receivers or power meters.

Similarly, relative power levels and operating times of the newer signals from the east and south were recorded continuously using antennas, filters, detectors, amplifiers, and strip chart recorders. Frequencies were determined using commerical receivers and absolute power levels were frequently measured using an appropriate antenna and power meter. Apartment complexes in Moscow distant from the chancery were monitered every few months at a minimum.

Tests for microwave radiation (between frequencies of 0.5 GHz and 10 GHz) at at all Eastern European posts included in the study were made periodically using appropriate antennas and conventional receivers or spectrum analysers. For exten periods at some of these posts, tests were made frequently, once or even several times a month. During the remaining periods and at other posts, tests were made probably once or twice a year on the average. Currently, tests are made at least twice a year. Only background levels have been detected at these Eastern European embassies.

METHOD OF STUDY

General

This study represents a broad survey of mortality and morbidity among the employees and their dependents, with special emphasis on illnesses, conditions, or symptoms suspected or known to be associated with microwave or other forms of radiation.

The information on these pertinent items was obtained from two major

sources: (1) the employees' and dependents' medical records located in the Office of Medical Services, Department of State (OMS), and from the medical divisions of other government agencies; (2) a Health History Questionnaire which was sent from Johns Hopkins to each employee who could be located, requesting information on hospitalizations, names of physicians seen since 1953, history of general illness, specific diseases and symptoms, and a history of radiation (diagnostic and therapeutic) exposure. The questionnaire also requested information on living and working locations during the tour of duty in the Moscow embassy in order to determine exposure to the microwave beams. Information on employees' dependents was obtained in the same manner.

A concerted effort was also made to obtain a death certificate on all deceased study subjects. In order to validate the medical conditions which the respondents reported on their health questionnaires, information from the records of hospitals, physicians and clinics were obtained and reviewed for a stratified sample of employees and dependents.

THE STUDY POPULATION

Composition of the Study Population

All those employed for any period of time in the Moscow embassy from January 1, 1953 through June 30, 1976, their spouses and children (whether or not they were at the embassy), and other dependents who had resided in the embassy, comprised the Moscow study group. Members of the Comparison study group were selected consisting of all those employed in the Comparison embassies or consulates during the same time period and their dependents as defined for the Moscow group. Assignment at the Moscow embassy had priority and individuals who had served in one of the Comparison posts and in Moscow as well were included in the Moscow group.

Identification of Study Population

The initial step in the present study, as in any follow-up study of an

occupational group, was to obtain a list of all personnel who had served in any of the selected posts at any time during the study period and also to identify their dependents who might have been with them during their tours of duty at any study post. The compilation of this basic list was an exceedingly difficult task requiring collation and cross-checking of many sources of employees names (see Table 1.1 for a list of these sources). Special problems were encountered among some of the women in the study group because of one or more changes in names due to marriage since the study tour.

Since it was difficult to know if the many lists provided by agencies resulted in a total enumeration of the population, it was decided to mail a Tracing Questionnaire to each identified subject who could be located in order to obtain information about details of the individual's tours and dependents, as well as a list of names of any other individuals who had served at the post at the same time and their address, if known. Many study participants were quite helpful in this regard, providing information on individuals who otherwise would not have been identified and in some instances providing information on deceased individuals that resulted in the acquisition of death certificates or medical records of importance to the study. Also, unsolicited letters from study subjects, perhaps initiated by communications from the Department of State or from Johns Hopkins, served as another valuable source of additional names.

Department of State current (as of June 30, 1976) employees were identified from a computer printout provided by OMS which listed separately for each of the nine study posts, all who had served during the study period. These lists had to be carefully cross-checked for duplicate entries which

occurred when a person had served at more than one of the posts. These basic lists were further checked for completeness by comparison with monthly computer printouts of staffing patterns covering a few specific years and also with other lists shown in Table 1.1. Information on the dependents of these subjects was obtained either from medical records which were often incomplete or from responses to the Tracing Questionnaire.

The identification of the State Department employees who had served in the study posts during the study period but who were separated (resigned, retired, or dead) from the State Department as of June 30, 1976 proved to be more difficult because no list of such individuals could be easily obtained. A computerized list comprised mainly, if not exclusively, of retired Foreign Service officers was available and was a valuable source of information. However, the only method which was likely to result in relatively complete identification of the separated group required a search of over 150,000 Service Record Cards (SRC) of all separated State Department personnel to ascertain who had served in any of the study posts during the study period. These records were located in the Personnel Department, Department of State, whose staff was very helpful in facilitating this enormous task, which required several months to complete. Staffing pattern reports, Tracing Questionnaires, medical records and other sources were used to supplement and cross-check the resulting file of separated Department of State personnel and to obtain information on dependents.

Employees of agencies of the U.S. Government other than the Department of State were more difficult to identify. It was particularly difficult to be certain, even after repeated questioning, to what extent the lists provided by the particular agencies included separated as well as current personnel who had served in the posts during the period of interest. Direct access to personnel records similar to the Department of State SRC records was not

Table 1.1 Sources of lists for identifying study population, study group, and date that the list was received by study staff: 1976-1977

Source of List	Study Group	Date Received
State Department computer print-out of current personnel	Moscow + Comparison	7/76
United States Information Agency	Moscow	8/76
Foreign Agriculture Service	Moscow	8/76
Abstracts of various Foreign Service Lists by State Department personnel	Moscow	9/76
Staffing Patterns, June 1976	Moscow	9/76
Who's Who in Moscow, August 1976	Moscow	9/76
Marine Security Guards, Eastern Europe	Moscow + Comparison	9/76
Department of Defense (Army, Navy, Air Force, Marines, civilians)	Moscow	9/76
Department of State personnel, Warsaw, 1954-1976	Comparison	10/76
Retired Department of State Foreign Service Officers	Moscow + Comparison	12/76
Listings of dependents of State Department personnel found in Archives in St. Louis	Moscow + Comparison	1/77
United States Information Agency	Comparison	1/77 + 4/77
Other miscellaneous lists	Moscow	3/77
Department of Defense (Army, Navy, Air Force, Marines, civilians)	Comparison	4/77
Directory of Moscow Embassy-1967	Moscow	5/77
Other Foreign Service lists	Moscow + Comparison	5/77
Tracing questionnaires	Moscow + Comparison	Throughout study
Lists and directories mailed in from study participants	Moscow + Comparison	Throughout study

permitted. Furthermore, it appeared that the Defense Department submitted a list of individuals from the comparison posts which were sampled in some unspecified manner, since very nearly equal numbers of individuals were included on the Moscow and Comparison Group lists, although this could never be confirmed. The sources of the lists of the non-State Department personnel are shown in Table 1.1 and include those obtained from the Foreign Agriculture Service (FAS), United States Information Agency (USIA), and Department of Defense (Army, Navy, Air Force, Marine Security Guards, and some civilians employed by the DOD). In some cases the lists of individuals included names of dependents. The Tracing Questionnaires sent to these persons were helpful in adding other individuals to the study group and in identifying their dependents.

MEDICAL RECORDS

Foreign Service employees and their dependents are no strangers to a physician's examining room. During a tour of duty, an employee can have as many as 20 physical examinations. A physical examination is required of Foreign Service employees for many reasons including:

- pre-employment
- prior to transfer from foreign post
- separation
- retirement
- return to the U.S. from a foreign post
- newly acquired dependent (marriage, birth, adoption)

The requirements listed apply to employees and all their dependents. Dependents are exempt only for religious convictions. If Foreign Service personnel fail to comply and do not have the required physical examinations

or if a dependent, upon the death of an employee, does not have the required examination, they may forfeit their benefits.

Location of Medical Records

The medical records of State Department employees and their dependents were stored in three places. All records for current State Department employees and their dependents were filed alphabetically in the Medical Records Division of the Department of State in Washington, D.C. While reviewing the records of employees, all the medical records of dependents were abstracted, since they were filed with the employee's records, even if they had not yet been entered into the study; this also provided a means for identifying dependents.

The records for separated employees and dependents were stored in two other locations. Records of recent separatees and dependents were stored in lots in the basement of the State Department Building, awaiting shipment to the Federal Record Center in St. Louis. These records remain in Washington approximately one year before being sent to St. Louis.

The third repository was the Federal Records Center in St. Louis. Employee and dependent records for all but recent retirees were stored there in lots, according to the date of arrival of the records. At the time of our review, lot numbers 17, 18, and 19 for medical records were stored at the Department of State, and lot numbers 1-16A were in St. Louis.

Employees of USIA and FAS are part of the same medical record system as the State Department employees, and their records were stored in the same places, under the same system.

Locating and gaining access to the Defense Department records presented a formidable and very time-consuming problem which was never satisfactorily solved. Both the military and civilian records of current employees are

located at their current post, which may be located anywhere in the United States or abroad. The greatest difficulty was ascertaining the present post for the military personnel, and obtaining the exact, up-to-date information necessary to locate their records.

Military records for retired Defense Department employees were located at the Military Record Center in St. Louis. Their dependents' records were stored in the Civilian Record Center. The locations of the medical records for current and retired employees and their dependents are summarized in Table 1.2.

Obtaining the Medical Record

The data necessary to obtain each individual's medical record varied, depending upon his status. At a minimum, only a name was necessary for current State Department employees, and at a maximum, five or more identifying items were essential for retired Defense Department personnel. For the records of dependents of retired personnel, it was essential to have the name, date of birth, St. Louis lot number (for civilians), name of last military post, and name and Social Security number of the employee. Table 1.3 presents the various items of information needed to locate the medical records.

Abstracting the Medical Records

Abstracting information from medical records began in September, 1976 and continued until February, 1978. Abstracting of non-State Department persons' military records was not as complete as for the State Department, in part due to the difficulty of locating them, and in part due to the time constraints of the study. (A decision had to be made to vastly curtail the search for non-State Department medical records in order to meet the deadline for completing the study.) Abstracting military records was

Table 1.2 Location of Medical Records for employees and dependents by employment status and employer

Employer	Current		Retired	
	Employees	*Dependents*	*Employees*	*Dependents*
State Department	Medical Record Division State Department, Washington, D.C.		Federal Record Center Civilian Record Branch, St. Louis	
Defense Department (Military)	At employee's present post United States & Foreign countries		Military Record Center[1] St. Louis	Federal Record Center, Civilian Branch, St. Louis
Defense Department (Civilian)	Dispensary of present post All over United States & Foreign countries		Federal Record Center Civilian Record Branch, St. Louis	
United States Information Agency	Medical Record Division State Department, Washington, D.C.		Federal Record Center Civilian Record Branch, St. Louis	
Foreign Agriculture Service	Medical Record Division State Department, Washington, D.C.		Federal Record Center Civilian Record Branch, St. Louis	

[1] A different section, but same building for Army, Navy, Air Force

Table 1.3 Information needed to obtain the Medical Record for employees and dependents by employment status and employer

((✓) = Required (X) = Requested)

Employment Status	Employer	Name	Name of Employee	Date of Birth	Soc.Sec. Number	Employee Social Security Number	St. Louis Lot No.	Present Military Post	Last Military Post	Date Retired
Current Employee	State Department[1]									
	Employee	✓	✓	X						
	Dependent	✓		X						
	Defense Department[2]									
	Employee	✓	✓	X	✓	✓		✓		
	Dependent	✓		✓	X			✓		
Retired Employee	State Department									
	Employee	✓	✓	X	X		✓			
	Dependent	✓		X	X		✓			
	Defense Department									
	Employee	✓		X	✓		✓[3]		✓	X
	Dependent	✓	✓	✓	X	✓	✓[3]		✓	

[1] Includes State Department, USIA, FAS

[2] Includes Army, Navy, Air Force, Marine Security Guards, civilians employed by the Defense Department

[3] Needed for civilian employees only

further complicated by their very size and volume -- in many cases their medical records were double the size of those of the non-military.

The process of abstracting the medical records began at the State Department in Washington, D.C. In a short time, however, the space available became quite inadequate to accomodate the necessary staff, and so this phase of the study had to be transferred to larger quarters in Roslyn, Virginia. This necessitated transporting the records back and forth from Washington to Roslyn daily. All records obtained from St. Louis were sent to the State Department and abstracted in Virginia. Veterans' records were sent to the Veterans' Administration Central Office and, since they were not allowed to be removed from the building, they had to be abstracted there.

Each individual medical record was reviewed in its entirety. All examinations from the time that an individual entered the military or Foreign Service, were abstracted. For State Department personnel, there was an average of six to seven examinations with the maximum rarely exceeding 20. The records for dependents under the age of 12 were abstracted using a very abbreviated form. Psychiatric examinations, which were available for some people, were abstracted by a clinical psychologist with the assistance of a psychiatrist. Routine psychiatric examinations, as well as those conducted for problems, were abstracted.

A standardized form for medical examinations was employed by the State Department for most of the study period (Appendix 2). The essential items abstracted from the records were general medical history, history of specific diseases, results of the physical examination, the clinical evaluation, results of laboratory examinations and additional information as deemed necessary. All diseases or medical conditions were coded using the International Classification of Diseases (ICDA), 8th revision, along with the

date that the disease or condition was first mentioned and the source of the information (6). The items abstracted are shown in Table 1.4. The medical abstract forms are presented in Appendix 3.

Quality Control of Abstracting

All abstracts were reviewed before being sent to Baltimore in order to (1) ascertain that each examination in the record was in fact abstracted; (2) compare the first and last examination of the completed abstract with the the actual record; (3) review the numerical values on laboratory results for unreasonable or impossible values. Furthermore, five percent of the abstracts were completely checked each week for each abstracter. The completed abstracts were returned to Johns Hopkins, where they were logged in and coded.

As another quality control measure, developed early in the abstracting process, approximately 10% of the medical records were independently abstracted in their entirety by two different abstractors. The two records were compared and the discrepancies were analyzed with respect to handwriting problems, differences in interpretation, errors of omission and other inconsistencies and appropriate adjustments in abstracting procedures were made.

Coding of Medical Abstracts

Several training sessions for the 20 to 30 coders were held prior to coding the information abstracted from the medical records. Their purpose was to acquire familiarity with the medical abstracts and to develop a level of understanding and skill among all coders.

Table 1.4 Summary of items of information abstracted from the medical record by source of information and number of examinations abstracted

Item on Medical Abstract	Source of Information	Number of Examinations Abstracted
Family history and tracing information	Patient	Completed once obtaining most recent information
Medical history & examination		
Present health Health since last exam	Patient	Completed once for each examination
Summary information Significant interval history	Physician	
General medical history Disease history	Patient	Each is completed once but updated any time the medical or disease history changes
Clinical evaluation	Physician	Completed once for each examination
Laboratory data	Physician	All available laboratory data in the medical chart was abstracted
Additional remarks	Physician	Completed as needed

A general session led by the supervisor was held in which all the coding procedures and all anticipated technical problems were reviewed.

Approximately five to ten medical abstracts were randomly selected from the files for training purposes. Each coder received a xerox copy of these abstracts and independently coded each one. In a second training session, each abstract was reviewed, the correct codes were discussed and all questions were answered. When the actual coding began, all the work was reviewed by the supervisors. As the coders became more familar with the procedures, some of the responsibility of checking the work was assigned to them.

Each coded medical abstract was checked by having a second, independent coder compare each coded item with the original medical abstract. The checker would make the necessary corrections. The purpose of this was to identify errors due to possible misinterpretations and to correct any minor errors that might have occurred as a result of the physical strain and fatigue associated with many hours of tedious coding.

The rather large amount of material that had to be coded from the medical abstract, which resulted in up to a maximum of 30 IBM punch cards per individual, necessitated dividing the coding into two categories: general medical and specialized medical. The coders were accordingly divided into two task groups. Each group had its own supervisor who would oversee the daily operation and answer any questions. Systems were developed to ensure smooth transfer of abstracts between the groups and inventories were maintained to minimize the chance of losing abstract forms.

All modifications of the coding rules that were of interest to the entire staff were discussed in general staff meetings and sent in written

memoranda to each staff member in order to stress the importance of referring to the written rules rather than depending upon memory.

The size of the coding staff varied from 20 to 50 members. For this reason, the coding was done in two offices. To maintain security and confidentiality for all records, a clerical system was developed to maintain log books identifying each medical abstract and its location at any time during a day's operation. At the start of each day, all the records to be coded were logged, their location indicated and the cycle continued through the day. At the end of each day, all medical abstracts were accounted for and logged back into the system. All records were then returned to the main study office and locked in file cabinets.

TRACING THE STUDY POPULATION

Tracing Questionnaire

Once a study member was identified, the next step was to trace that individual, i.e., find an address or phone number where contact could be made to obtain information required for the study. In most cases initial addresses were obtained either from personnel or medical records. Each identified employee was sent an introductory letter and a Tracing Questionnaire (TQ) (Appendix 4). The purpose of the TQ was to attempt to further identify all family members of the employees (spouses, children, other dependents at the embassy) and to ascertain a correct address. In addition, the TQ requested the respondents to list the name and address, if possible, of anyone they remembered who had been stationed at the embassy during their tour.

Included in this mailing was a self-addressed stamped envelope and, later, a letter signed by Richard M. Moose, Deputy Under Secretary of State urging participation in the study (Appendix 5). The envelope was marked

"Address Correction Requested," and thus if a letter was forwarded to a different address, the study staff would be notified of that address by the Post Office.

The items contained in the TQ were: name, address, birthdate, social security number, and marital status for the employee, names of all spouses, and all children; the names and addresses of dependents stationed with the employee; and the names and addresses of others stationed at the embassy.

All mailings were by airmail, except those going to an embassy, which were delivered to the State Department and sent by diplomatic pouch to the various embassies. The address and date of each mailing were entered on a study log sheet and file card and also recorded on a tally sheet in the front of the log book. This provided a record of the number of attempts made to reach each person. The card file was maintained in alphabetic order in order to eliminate duplicate entries. Maiden names were also entered onto file cards.

When the TQ was returned, it was processed systematically using a check list to insure that each step in the processing was carried out. Newly identified individuals were assigned study numbers. All data was reviewed for accuracy and corrections were made where necessary. A careful check was made for duplication of newly assigned study subjects. Those who had not served at any of the study posts or who had served before the study years, were not included in the study. All information from the TQ was then coded, checked and prepared for data processing.

Any discrepancies or omissions between the information on dependents obtained from the respondent's TQ and the data from the medical abstract, were verified by sending a letter to the respondent explaining the need for

complete and accurate information on all dependents. Another TQ was included for this purpose.

Time limitations demanded that all information be clarified as quickly as possible and, therefore, letters were sent only to those who were located outside the country. Others were contacted by telephone.

If a TQ was returned as being undeliverable, the address on the envelope was immediately checked for accuracy. Minor typing errors were corrected and the letter was remailed. If the employee had moved and no forwarding address was available, the card was marked for further tracing.

When letters were returned to the study office from the Post Office as undeliverable, alternate address possibilities were explored. Additional sources for address information were available, as follows:

- The medical abstracts usually contained the last known address of the employee and frequently the name and address of the next-of-kin.
- The Department of State computer print-out of retired employees who were receiving pension checks. If the name of the employee was not on the list, the name of the surviving spouse was frequently found.
- The Department of Defense (through a Department of State intermediary) submitted a list of updated addresses for its current and former personnel, along with social security numbers which had not been previously available.
- The TQ provided additional address information on other study subjects.
- The Foreign Service Lounge of the Department of State provided the posts of personnel who were currently serving at a foreign embassy. They generally knew where to contact an employee recently separated from the Foreign Service or recently returned from a foreign post.
- The telephone information service in the city where the TQ had been mailed could provide a telephone number and often a new address, if the employee still resided in that area.
- Criss-cross directories are available at the Baltimore Enoch Pratt Library, as well as at public libraries in other cities. Information librarians were very cooperative in finding addresses if a telephone number was available.

- Returned receipts for certified mail provided alternate names to help in tracing employees.

Another source that was used for individuals who were difficult to trace was Departments of Motor Vehicles (DMVs). A list of names with the last known address was sent to DMVs throughout the United States. The more information available on the individual, the greater the likelihood of securing an address for him from the DMV. Often only a name was available. When the date of birth and, particularly the social security number were available, a positive return was likely.

About 450 names were sent to 44 state DMVs; 143 people (or 31%) were located in this way. Nineteen percent of the addresses for this group were correct as stated in study records; 60% of the 143 found by the DMVs were found to be new and usable. Sometimes just one name was sent for tracing. However, 74 names were sent to California and 64 to Virginia. California returned close to 40% of names of which 38% had usable addresses and Virginia returned 42% of which 44% were usable (Table 1.5). Of the 450 names sent to DMVs, about 90 new addresses were obtained that were unavailable at the time from other sources.

As the tracing progressed, a computerized system was developed to facilitate monitoring of the tracing process and to issue requests for further tracing of individuals as soon as such a need was determined. A further reason for instituting the system was the unfortunate discovery that several State Department employees had been contacted more than once due to the enormity of the tracing operations and the difficulties in keeping a manual system current. Weekly status reports were generated by computer to ensure that the rate of progress was consistent with the study deadline. The study population proved to be notoriously mobile and difficult to find, but the tracing staff became extremely resourceful and unrelenting

Table 1.5 Summary of number of names sent to Departments of Motor Vehicles, percent returned, and percent with usable addresses, by state: 1978

State	No. Sent	Percent Returned	Percent Usable of all Returned	State	No. Sent	Percent Returned	Percent Usable of all Returned
Alabama	1	100	100	New Hampshire	1	100	100
Arizona	9	33	67	New Jersey	8	13	100
California	74	39	38	New Mexico	2	50	100
Colorado	7	14	100	New York	44	27	75
Connecticut	7	57	75	North Carolina	12	17	100
Florida	17	6	100	Ohio	10	40	75
Georgia	5	20	100	Oregon	8	50	100
Illinois	17	12	50	Pennsylvania	26	15	75
Louisiana	2	100	50	South Carolina	7	29	50
Maine	4	25	100	Tennessee	4	25	100
Maryland	36	39	100	Texas	23	13	67
Massachusetts	11	36	75	Utah	1	100	100
Michigan	5	40	50	Vermont	3	100	100
Minnesota	7	43	67	Virginia	64	42	44
Missouri	5	60	33	Washington, D.C.	11	45	60
Nebraska	1	100	0				

in their efforts to locate people. The State Department employees (SD) were easier to trace than the non-State Department group (NSD) mainly because of the availability of more cooperative sources of information within the State Department.

A detailed list of sources used for tracing the study population is shown in Appendix 6.

HEALTH HISTORY QUESTIONNAIRE

An important data source was the Health History Questionnaire (HHQ), which was developed to collect data on the current health status of the study population and also to ascertain exact working and living locations of the individuals who were in Moscow (Appendices 7-9).

Description of the Health History Questionnaire (HHQ)

The HHQ was bound in two different colors. A yellow questionnaire was sent to employees and their spouses and a blue one to dependents. The only difference between the two was that the dependents' questionnaire excluded questions on reproductive experience. All individuals who were traced and had a verified address were considered qualified for a mailing of the HHQ, which started in late August, 1977.

The HHQ attempted to obtain many details on the individual's past and present physical and social environment, thereby providing a relatively complete health status profile for analysis. Table 1.6 presents a list of the primary items included in the HHQ, and also indicates those items affected by changes in the format of the HHQ which had to be made in modifying the HHQ for use in telephone interviewing which had to be done, to meet the study deadline. Each general item listed in Table 1.6 had many sub-categories.

Table 1.6 Items included in the Health History Questionnaires (HHQs) for employees (empl) and dependents (deps) for each phase of the study

HHQ Items	Mailed HHQ (8/77 to 3/78)	First phase: phone HHQs (3/78 to 5/78)	Second phase: abbreviated phone HHQs 5/78 to 6/78
Demographic information	empl + deps	empl + deps	empl
Location of working and living quarters in Moscow and foreign embassies	empl + deps	empl + deps	empl
Disease history	empl + deps	empl + deps	*
Symptom history	empl + deps	empl + deps	
Hospitalizations since 1950	empl + deps	empl + deps	
Physician & clinic visits since 1950	empl + deps		
Accidents & injuries since 1950	empl + deps	empl + deps	
Diagnostic or therapeutic radiation	empl + deps	empl + deps	
Reproductive experience	empl + spouse	empl + spouse	
Status of children	empl + spouse	empl + spouse	empl

* In place of questions dealing with diseases, symptoms, etc., the respondent (usually employee) was asked a general question--to relate any unusual or serious illnesses that he/she or any member of his/her family might have had.

The last page of the questionnaire contained two authorization forms - one to be retained by the informant and the other to be signed and returned to the study staff granting permission to request information from hospitals, physicians, clinics, etc. concerning the individual's case history, treatments, examinations, or hospitalizations, including copies of hospital and medical records.

Several different letters were written for the different subgroups of the study population, to be included with the questionnaires (Appendix 10). The letters explained the importance and intent of the study and that the data obtained was privileged information and would be held in the strictest of confidence. The individual's cooperation in completing and returning the HHQ as soon as possible was also requested. During the course of the study, there was a steady flow of correspondence as a result of the questionnaires. Every effort was made to answer all questions and comments. Many participants wanted reassurances about the authenticity and confidentiality of the study; others questioned their eligibility for inclusion in the study.

The HHQ was sent to all traced employees who had served from 1953 - 1976 in the Moscow Embassy or one of the selected European embassies. One was also sent to spouses, ex-spouses, dependents not residing at home, and unrelated dependents who had lived with the family during their tour of duty at the relevant embassy.

As the individuals were traced, and their names and addresses coded, a set of three address labels was printed with the individual's study number, name, and address on each. One label was affixed to the questionnaire, one to the envelope, and the third was placed on the individual's study log sheet, along with the date of mailing. The mailed

questionnaires included a letter and postage-free return envelope.

As each questionnaire was returned to the study office, the date of return was recorded on the questionnaire and coded. The questionnaires usually fell into one of three categories:

(1) the questionnaire was completed and the return date was coded;

(2) the questionnaire was not completed and was coded as requiring further follow up, i.e., a second letter or personal call;

(3) the questionnaire was returned as undeliverable; this was coded as such and additional attempts were made to trace the individual.

The questionnaires were stored in locked file cabinets, in numerical order, for further processing. The processing included checking names, addresses, and entering new study participants, spouses, children and other dependents not already in the study.

Each study participant was requested, in a letter enclosed with the HHQ, to mail copies of any current medical records they had in their possession. Many participants cooperated with this request and, on occasion, indicated an impending hospitaliztion. A major concern was to verify the accuracy and completeness of the medical information reported in the HHQ with hospitals, physicians, and clinics.

Each HHQ received was entered on a log as either being from individuals who had been in Moscow or a Comparison post and was maintained in a study number file for future coding and analysis. Those comprising the Moscow population were subdivided into three groups regarding exposure to microwave radiation: the exposed (to other than background levels), the unexposed, and those with questionable exposure.

The process of determining exposure involved the use of a work-sheet provided by the State Department to "Determine Approximate Maximum Exposure to Non-Ionizing Electro-magnetic Radiation during Assignment to the American

Embassy in Moscow," and a map of the location of the embassy, and a plan view of the Embassy compound (Appendix 11). The State Department provided the exact locations of various offices and apartments in the Chancery. An individual was considered to have had questionable exposure if there was complete uncertainty with regard to his working and living areas in the embassy. For these cases, a personal telephone call was placed in an attempt to aid the individual in recalling the location of his working and living quarters. However, many individuals remained in the "questionable" category due to the nature of their employment at the embassy or because they simply could not remember this information.

The sample selected for verifying the medical information reported in the HHQ consisted of all employees and dependents in Moscow classified as having been exposed to microwave radiation and a 10% random sample of employees and dependents in the Comparison embassies and in Moscow classified as unexposed or uncertain as to exposure to microwave radiation.

Letters requesting the discharge summary sheets and diagnosed conditions were sent to the hospitals, physicians, and clinics reported in the HHQ (Appendix 12). These requests scanned the globe, from Honduras to Hong Kong and England to Ethiopia. Hospital and Physician Directories were used to search for the complete current mailing addresses of these hospitals, physicians, and clinics. Assistance was obtained from the various embassies in Washington for oversea addresses. The Personnel Records Center in St. Louis, Missouri assisted in the acquisition of civilian and military medical records. In general, the response from these hospitals, physicians, and clinics was one of prompt attention and complete cooperation.

A color-coded numerical card file served as an index of the sample population, and included a tab system denoting the month the medical records

were requested and received from the hospitals, physicians and clinics. The official medical records were filed numerically and used in conjunction with the medical information reported by the participant in the HHQ.

The return rate of HHQs mailed and returned by State and Military Foreign Service employees was about the same at the end of February and March, 1978, showing a 29% response rate for State Department employees and 32% for the military, with an overall return of 30%. Since this rate was unacceptable, it was decided to initiate an ambitious system of tracing and interviewing State Department employees by telephone. Except for Marine Security Guards, non-State Department employees were not included in this telephone interviewing effort. The HHQ was indeed lengthy, perhaps overwhelming for many individuals. The questions were designed to delve into many details of health history, perhaps placing too great a demand on the individual's power of recall. It was initially felt that Foreign Service employees would perhaps be more "form" oriented than many other occupational groups and thus more likely to respond to such a written questionnaire and in fact, many written questionnaires were meticulously completed.

However, it was decided that the mailing of HHQs should be terminated and that telephone interviewing, using the basic HHQ questionnaire, should be initiated to improve the response rate for the State Department group. Unfortunately, resources did not permit a similar pursuit of the non-State Department employees. To facilitate interviewing and save time, questions dealing with the residential history and physician and clinic visits were eliminated, and the question dealing with occupational history was streamlined. These were the only substantial changes in the HHQs format (See Table 1.6).

Interviewing Format

A folder was compiled for each study family (which could include one or more family members), containing the following:

1. Telephone HHQ. For each study member, an HHQ was affixed with that member's computerized label with study number, name and address.

2. Computerized Telephone Sheet. For each participant, this sheet contained the same information as the mailing label as well as other information on family members.

   If not the index employee, the member's relation to the index employee, date of birth, social security number, and government agency employer at time of index tour, were also printed.

   All family members included in the folder were listed, with their relation to the index employee. Space was available on the Telephone Sheet for the interviewer to record the outcome of any interview or contact, and to update the current phone number or address of the member or informant.

3. Dispostion Sheet. This sheet was maintained by the interviewer and listed every source, phone number, and person contacted in attempting to interview a participant, and the date each attempt was made.

Three sources of personnel were enlisted to do the phone interviewing:

1. Medical abstractors in Roslyn, Va. who were completing the coding of the medical abstracts.

2. Johns Hopkins personnel who had been tracing individuals in the study population.

3. The Survey Research Unit of the Hopkins Population Center, School of Hygiene and Public Health, who agreed to assist with telephone interviewing.

All of the interviewers were trained by a Hopkins interviewing supervisor with over 15 years of experience in interviewing techniques. They were given detailed instructions on the interview protocol and hints for eliciting information.

Several logistical complications were introduced by the conversion to a telephone interviewing scheme. Mailed questionnaires continued to arrive, individuals were being traced, and phone interviews were being completed

by each of the three groups mentioned above at a rapid rate. Furthermore, there were questions about how much time and money could be devoted to interviewing, thus making it uncertain just how many of the remaining non-respondents could be attempted to be contacted by phone, with the remaining time and resources. A computerized system was developed to record and report on the status of the interviewing and to select "batches" of families for interviewing. For a fixed batch size, families were selected randomly from among those who had not yet responded to the HHQ — 100% of all remaining Moscow employees and 50% of all remaining Comparison employees were sampled. This selection process had to be repeated three times during the two month phone interview phase and, finally an attempt was made to contact by phone all but about 30 of the Moscow employee group and 160 of the Comparison group who were not living overseas. The overseas non-respondents presented special problems. Phone interviews were attempted in a few cases but these proved to be prohibitively expensive. Telegrams were sent to many posts requesting that questionnaires be returned, but it is doubtful if this had any effect.

Interviewing Protocol

The following was the basic guide in conducting the phone interviews:

1. Each questionnaire must bear the following information: date of interview or contact, name or initial of interviewer, outcome of call, and (if someone other than the individual on the form's label completes the questionnaire) the name, address, and phone number of the informant.

2. Information may be obtained from any adult at the discretion of the interviewer, if for example, the subject is deceased or unavailable.

3. The State Department must be mentioned when the interviewer introduces him/herself to the respondent, i.e., "I'm Ms./Mr. _____ with the School of Hygiene of the Johns Hopkins University in Baltimore. We are presently engaged in a Microwave Radiation Study with the Department of State."

4. Questions that a respondent may have, outside of those which an interviewer can answer simply (i.e. where their name was obtained, the purpose of the study, etc.) should be referred to the Supervisor, as should any complications that arise in the interviewing situation.

5. To insure that all questions in the interview booklet are asked, "DK" for "don't know," "refused to answer," or "none" must be written whenever appropriate, as opposed to leaving any blank spaces next to questions in the booklet.

6. A Disposition Sheet, kept with each HHQ, must reflect every attempt that was made to find or interview each subject, and the steps that were taken at each attempt. Resolutions of each interview or tracing situation, updated addresses and phone numbers, and all corrected information (such as relation to index employee) should also be recorded on the Telephone Sheet.

7. The Disposition and Telephone Sheets should reflect any unusual reason or attitude an individual may have, particularly for those refusing to complete the HHQ over the phone.

8. When all possibilities for interviewing and tracing were resolved or exhausted, the Telephone Sheet was stapled onto the Disposition Sheet and, together with the HHQ, returned to the Supervisor.

The telephone inteviewing for the HHQ was a success. The response was good, as was the quality of information received.

The Foreign Service Health Status Study had a large study population and in order to attempt to reach all individuals, particularly those at the various overseas embassies, it was realized that it would be necessary to expedite interviewing once again. Therefore, early in May, the HHQ was shortened considerably (See Table 1.6). Because of the time and expense involved in phone interviews with overseas participants this abbreviated questionnaire was essential; it was also used by the tracers. Instead of completing a TQ for new individuals entering the study and mailing them an HHQ, personnel who were tracing individuals by telephone now used the abbreviated HHQ over the phone when they located a study participant.

The abbreviated questionnaire usually addressed itself to one adult member of the family (the index employee) who answered the questions for all family members and included the following:

1. Demographic information
2. Status of children
3. Location of working areas and living quarters in Moscow and duty assignments to selected foreign embassies
4. General question on significant health problems of all family members

The number of questionnaires assigned to each of the three interviewing groups differed, based on existing commitments to other components of the study. The Survey Research Unit was able to devote its time exclusively to telephone interviews. The other two groups were still involved with tracing and the final phases of coding medical abstracts.

Their success in completing HHQs, however, was similar: 93% for the Baltimore group, 91% for Roslyn and 87% for the Survey Research Unit. The The Survey Research Unit had more refusals than the other two groups; 10% refused to answer the questions in the HHQ as compared to 5% and 7%, respectively, for the Baltimore and Roslyn groups. Those who refused to answer the HHQ usually offered an explanation (either by mail or over the phone) and gave the following reasons for their refusal:

1. Intrusion on one's privacy
2. Did not insure confidentiality
3. Too long
4. No interest in study
5. Spouses and dependents did not live at embassy

The percent of HHQs completed over the phone was obviously more impressive than the return of the HHQs mailed to the study members. It is perhaps

easier to recall dates and past events with a little encouragement from a telephone interviewer. The interviewer had information, mostly maps and diagrams of the embassy and surrounding streets, at hand that was helpful in enabling an informant to recall the exact location of their living and working areas within the embassy. It is also quicker and more convenient to have someone fill in the information as the questions are presented rather than to record it oneself.

ASCERTAINMENT OF DEATHS AND OBTAINING DEATH CERTIFICATES

A major objective of this study was to compare the mortality experience of State Department employees in Moscow with those in Comparison groups from other Eastern European posts. In view of this objective, it was necessary, in addition to the date and place of death, to obtain the death certificates of those individuals identified as deceased to ascertain the cause of death, which would be coded and analyzed. Death certficates also frequently served as a means of identifying family members as yet not included in the study population, or of locating individuals previously determined to be untraceable.

The identification of deceased individuals, employees, and dependents was determined from many diverse sources, including Service Record Cards, Tracing Questionnaires from the individual's family, Tracing Questionnaires from employees or friends, Medical Record Abstracts, Health History Questionnaires, personal correspondence (letters and telephone calls) from study participants, and in a few cases the Social Security Administration.

After the initial identification of a deceased individual, it was necessary to verify the information. This procedure involved an in-depth search into the medical abstracts, TQs, HHQs, and countless letters and telephone calls to the next of kin. Without the year and place of death

(city, state, county), a death certificate cannot be obtained. Very often only an approximate date of death or date of separation from employment was available, thereby raising doubt as to whether or not the individual was in fact deceased. It may be interesting to note that the staff encountered a few uncomfortable moments when telephoning the next of kin for additional information on the deceased, only to discover that they (the staff) were in fact conversing directly with the individual presumed to be dead. On occasion, death certificates were personally obtained from such sources as the deceased's family, trustees of an estate, and funeral homes.

In an effort to locate a group of individuals for whom there was no current address, and who were perhaps deceased, it was decided to make use of a service provided by the Social Security Administration (SSA). Given a person's name and his or her social security number, the SSA will search their files for that individual and, only if that individual is dead, they will provide the date and place of death. In order to estimate the completeness of the Social Security Search, two groups of names were sent to the SSA. The first group consisted of 401 individuals with no known address, with a known social security number, and with unknown vital status. The second group of 58 persons represented a sample of known deaths. It was of interest to determine how many of these individuals Social Security would find.

Of the known 58 deaths (employees and dependents), Social Security identified 19 or 33%. One probable reason for this low percentage is that the individuals in these study groups do not receive death benefits from SSA. But SSA did uncover approximately 21 previously unknown deaths, representing nearly 5% of all deaths identified in the study population. Table 1.7 shows the results of the search by Social Security in more detail.

Once the vital information (date and place of death) was obtained, a death certificate request form was completed and sent to the Vital Records

Table 1.7 Distribution of numbers of individuals sent to Social Security Administration for determinination of vital status

	Total	Unknown Vital Status	Known Dead
Total number sent to Social Security	459	401	58
Reported dead by Social Security	42	23	19
Death Certificate received	35	17	18
No death certificate obtained but death confirmed by other sources	3	2	1
No confirmation, (possible death)	2	2	
Alive	2	2	
Not reported dead by Social Security	417	378	39
Death Certificate received	44	9	35
No death certificate, other confirmation	N.A.*	N.A.*	4

* Not applicable

Office in the Department of Epidemiology at Johns Hopkins, for the final search.

A color-coded alphabetic card file served as a master index of all deceased individuals, in conjunction with a tab system, to denote the month that the death certificate was requested and received. The death certificates were contained in an alphabetic file and coded upon their arrival.

DATA PROCESSING

The Johns Hopkins Medical Institutions Information Systems Division dual IBM 370/148 computing facilities were used by the study to accumulate and organize data on the study population in parallel with and complementary to the clerical filing system. Computer programs were written to measure the progress of tracing and follow-up of individuals, to print lists and rosters designed to aid clerks and coders, to print certain abstracting forms for coding and screen for omissions and inconsistencies. Programs were especially designed and others adapted to display and summarize the considerable amount of information gathered for employees and their families.

Nearly 200,000 punch cards were finally necessary to contain the data collected for the 12,000 persons studied and each of these were corrected on an average of 2 to 3 times, as current and more precise information became available during the study.

Figure 1 diagrams the flow of information from clerical abstracting and encoding to more protected and accessible magnetic tape storage. The steady and constant flow of batches of cards with information on the study population were entered onto magnetic tapes by means of programs adapted

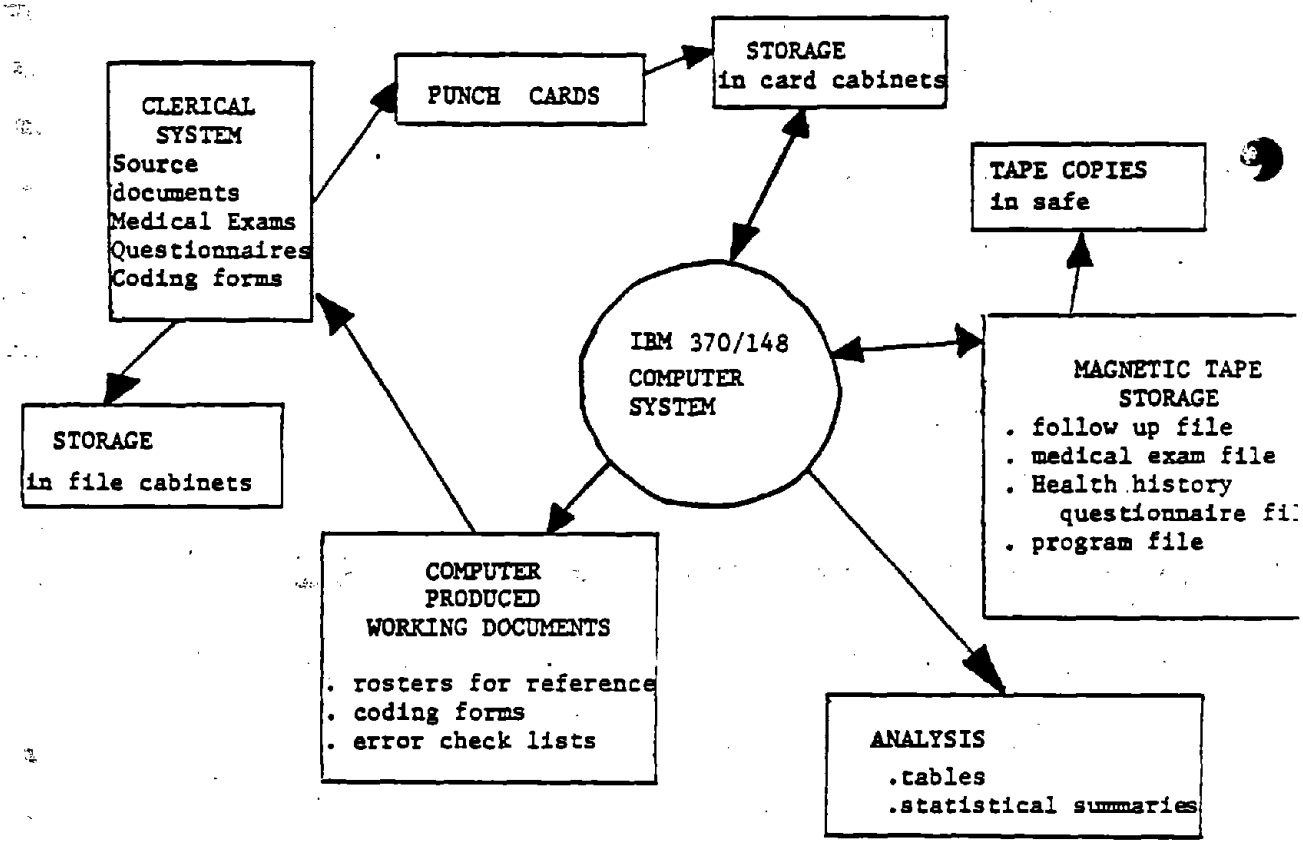

Figure 1 Diagrammatic representation of information flow.

for the purpose. Various back-up systems were devised to insure against the accidental destruction or loss of the gradually accumulating and improving data base due to programmer or system operator errors or physical disaster. Batches of punch cards were labelled, recorded and stored in the order of entry into the system. The generation card record would have enabled the entire magnetic tape file to be rebuilt from cards. Separate (not overlapping) generation systems were used to assemble follow-up data, medical examination findings, and responses to the Health History Questionnaire.

Each of the three systems used four magnetic tapes in rotation, copying one to the next but including the batch of additions and corrections submitted on punch cards (Figure 2) so that at any time, the current "best" version and the three preceding versions would all be available. Regeneration starting with any one of these recent versions would be more convenient than beginning with cards only. Two additional magnetic tapes, which could be removed from the computing center vaults, were copied alternately (Figure 2) from every cycle of four generations, and stored in a separate building in a fireproof safe, to protect against failure or destruction at the computing center tape management system.

These safeguards were designed against rare but real hazards which could have seriously delayed the analysis and final report of the data. Security against dissemination of personal or classified information depended on the continued care of the study staff to lock cabinets and doors and to destroy by burning any study materials to be discarded.

Computer programs and the procedures for using them which were developed and perfected in the course of the study, were also protected. Over 150 computer programs were written consisting of about 100 programs for data management and about 50 for the final analysis of data. These programs themselves were stored on 25,000 punched cards. Protection of

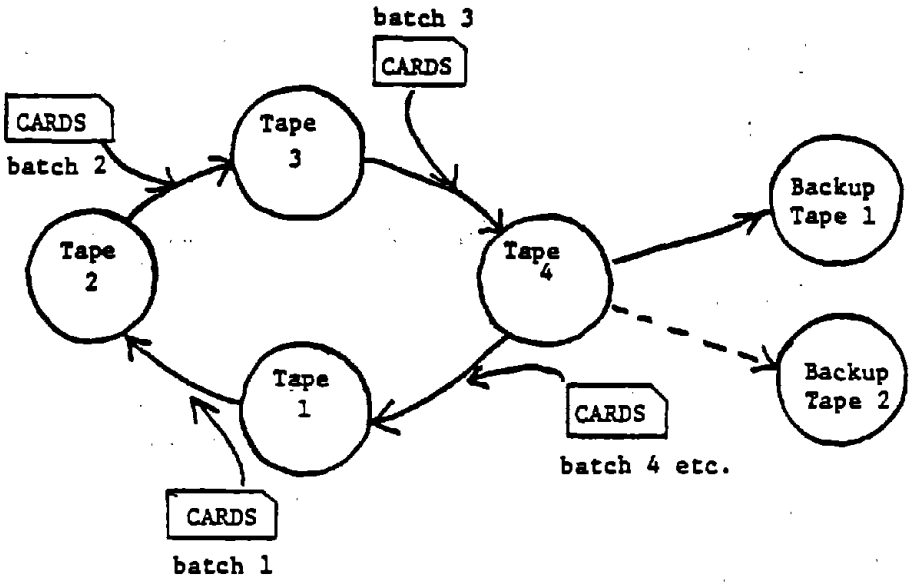

Figure 2 Diagrammatic representation of magnetic tape data set generation system.

the security of the programs was as important as the security of the data, so program texts were stored and updated on a set of generation tapes similar to Figure 2, so that both cards and magnetic tape copies were available. Bound lists of program texts and job control information provided by the computer system during runs of each program provided another backup. A data processing manual was gradually compiled which specified all the procedures for accumulating, accessing and analyzing the data base of the study. This manual and a duplicate, served as insurance in case those routinely responsible for data processing tasks became unavailable. This manual is also intended as a reference for the custodians of the data.

The programs to determine results of the study were also accumulated during its course in order to manage descriptive, technical performance, and analytical tables and statistical displays which in the closing weeks of the study were in constant development and were continually being reapplied to the increasingly complete data base. The final resulting magnetic tapes from each of these systems provide a durable long-term record of the study.

SECTION 2 - METHODS OF ANALYSIS

OVERVIEW

The plan of analysis and the methods used will be outlined in this section. Primary attention was focused on employees who served at one or more of the study posts because information on them was much more complete than for their dependents and also because exposure to microwave radiation was presumably greater in the working areas of the Moscow embassy than in the living quarters. However, it was possible to perform some analyses of the health status of dependents, both adults and children.

In a complex study such as this, a very large number of subgroup comparisons are theoretically possible. For obvious reasons, choices must be made as to which comparisons are precise enough to be useful and simple enough to be practical. Hundreds of factors were examined in terms of the following two basic comparisons:

1. Moscow post versus Comparison post individuals
2. Moscow population divided into subgroups by various measures of exposure to microwave radiation

In some cases the above comparisons were made separately for males and females, since men and women have very different rates of occurrence of the factors reviewed in this study. It was also necessary, in some cases, to stratify by employer (State Department versus non-State Department) since access to medical records and, to some extent, resources for tracing were better for the State Department than for the other employees. Furthermore, since the age of an individual and the calendar time period during which he or she was observed may have influenced the frequency of

occurrence of the factors of interest, most comparisons required statistical adjustments to take into account any differences that might have existed among the comparison groups with respect to age or calendar time period of observation.

TECHNICAL PERFORMANCE

The performance of the FSHSS in terms of the success of tracing, acquisition and abstraction of medical records, and response to the Health History Questionnaire (HHQ) will be discussed in detail in Section 3. The effect of factors such as employer, source of name and type of questionnaire on the performance characteristics will be presented.

DESCRIPTION OF STUDY POPULATION

The population finally available for analysis consisted of those individuals who could be traced and, of these, only those with a medical record abstract or a Health History Questionnaire could be included in some analyses. The descriptive portion of the analysis presents characteristics of the study population including sex, year and age at arrival at study post, study posts served in, number of tours served in study posts, and geographic location at the time of tracing. Also included are comparisons of respondents and non-respondents to the Health History Questionnaire and comparisons of individuals for whom medical records could and could not be abstracted to determine whether these groups differed meaningfully.

MORTALITY ANALYSIS

Death is a most important health effect; therefore much attention was given to the analysis of mortality experience in several study subgroups. The analytic technique chosen used the computer program and set of standard death rates developed by Monson (1) to compare the observed number of deaths

in each of several study subgroups to the number of deaths expected, if the rates for the U.S. white population of the same age and sex during the same calendar period had applied.

For each subgroup, separately for males and females, each year of survival observed for each person was allotted to a five year age group and calendar time period cross classification. Persons were assumed to enter or leave the study at midyear; one-fourth of a year was allocated to persons who entered and left in the same year.

U.S. white, sex and cause-group specific rates for each five year age group and calendar time period were multiplied by the corresponding person years observed for a study subgroup in order to estimate the number of individuals who would be expected to die from each group of causes. The ratio of the observed number of deaths to the number expected represented the standardized mortality ratio (SMR) for that cause, standardized for age and calendar period, and specific for sex. The sum of male and female observed deaths divided by the sum of the expected deaths provided a summary mortality ratio also standardized for sex. Exact ninety-five percent confidence limits on the SMRs were computed assuming that the observed number of deaths were distributed as a Poisson variable and that the expected number of deaths which were derived from the U.S. experience was a fixed constant and therefore not subject to sampling variability.

U.S. white death rates were supplied by Monson's program for 59 groups of causes including total mortality and total cancer mortality, but because the program did not include rates for the most recent periods, approximate rates were used. For mortality from all causes, rates supplied by the National Center for Health Statistics were used. For females, the 1965-67 average total mortality rates were used for the 1965-69 period, 1970 rates

for the 1970-74 period and 1975 rates for 1975-78. For all other female cause of death groups, the 1965-67 average rates were used for the 1965-69, 1970-74 and 1975-78 periods. For males, 1975-78 total mortality rates were approximated by 1975 rates and for other cause groupings, 1970-75 rates represented 1975-78 rates (2,3).

Comparisons of mortality experience were made among those who served in Moscow and none of the other study posts, those who served in Moscow and at least one of the Comparison posts, and those who served in one or more of the Comparison posts but who had not served in Moscow. In most cases these contrasts were made separately for men and women and for each employer (State Department versus non-State Department personnel). Variations in experience among the individual different Comparison posts were examined as well as the differences between those who served at multiple posts and those who only had served at a single post. Within the group of individuals who had ever served in Moscow, mortality comparisons were made according to year of arrival. Comparisons of mortality experience were also made by the different sources of the individual's name. Finally, comparisons for selected subgroups were made by specific causes of death.

MORBIDITY ANALYSIS

Due to the possibility that microwave radiation might not have an effect on mortality but might induce changes in other health related conditions, an attempt was made to collect and analyze as much detailed information as possible on medical conditions present in the study group to determine if the Moscow group had experienced a higher frequency of morbidity than the Comparison group. There were two basic sources for morbidity information: the abstracts of medical records and the Health History Questionnaires. The medical record abstracting was more complete and provided

more information and additional effort was devoted to its analysis. However, the Health History Questionnaire was the source of information on the most recent health status of the respondent and it provided the only direct way of determining whether the individual had been in any of the exposed areas within the Moscow Embassy. Information analyzed from the medical abstract was of 6 types:

1) Health summary information for all examinations, as well as those following arrival at the index study post, such as hospitalizations, medical evaluations, present health summary, etc. (8 items),

2) Results of laboratory or other procedures available from the most recent examination, such as blood pressure, pulse, ECG, white blood cell counts, visual acuity, and hearing (6 items).

3) General medical history items which were yes/no items with an indication of those ever mentioned as positive and those positive for the first time after the index tour (20 items).

4) Disease history items which were yes/no items with an indication of those diseases ever mentioned as present and those that were present for the first time after the index tour (74 items).

5) Clinical evaluation items which were yes/no items and provided the results of a given examination with an indication of those findings ever present or those that were present for the first time after the index tour (19 items).

6) Any medical condition mentioned anywhere in the record besides the above items was coded using the ICDA 8th revision classification (4) along with the date of first mention in the record and the source of information (over 40,000 conditions were coded on employees and over 20,000 on their dependents).

Information analyzed from the Health History Questionnaire obtained from study subjects was of 5 types:

1) General medical history which were yes/no items with an indication of those conditions that were ever present and those that were present for the first time after the index tour (28 items).

2) Symptom history which were yes/no items with an indication of those symptoms ever present and those that were present for the first time after the index tour (20 items).

3) Miscellaneous quantitative variables such as smoking history, hospitalizations and physician visits (total and after index tour), accidents or injuries, pregnancies, pregnancies with problems, and children with problems (7 items).

4) Information on children with problems such as congenital malformations, leukemia, blood disorders, mental or nervous conditions, behavior problems, chronic diseases, hospitalizations or operations, or other conditions (8 items).

5) Any disease or medical condition in any employee or dependent not included in the above items was coded using the ICDA 8th revision, four digit classification code along with the date of occurrence (over 4000 conditions were coded).

Two approaches were adopted for the analysis of the ICDA conditions. The twenty most frequently reported conditions, totally and first present after the index tour, for the Moscow and Comparison groups were compared to see if there were major differences in the most common health problems. In addition, 44 selected groups of conditions were identified and the rates of occurrence of these were compared. Comparisons between Moscow and Comparison groups on medical abstract items other than the ICDA conditions were examined separately for males and females. Also, internal comparisons of the Moscow group were made according to microwave exposure based on living and working locations.

Similar comparisons were made for the data obtained from the Health History Questionnaire except that in some instances, because of an inadequate number of respondents, the Moscow material was not compared internally according to the exposure measure.

For nearly every item studied, a distinction was made between events or conditions ever present in an individual's record, and those first present after arrival at the index post—either Moscow for the Moscow individuals or one or the other of the Comparison posts for the Comparison individuals. The "ever present" comparisons measured the differences in the frequency of the condition and provided an overall health contrast both before and after the

study tour. This was used primarily as a descriptive summary measure but had the feature that events or conditions which could not be determined as having been present before or after the index tour could still be included in the analysis. Simple percentages of individuals who had the specific event or condition were calculated.

Of greater interest were the differences between Moscow and Comparison groups and between the different exposure subgroups within the Moscow group regarding the rate of occurrence of conditions which were mentioned for the first time after the index tour, since these may have been caused or aggravated by some exposure at the index post. Annual rates of first occurrence for a subgroup (per 1,000 person years in the subgroup) were computed by taking the ratio of the number of persons in the subgroup with the condition mentioned for the first time after the index tour to the total number of person years observed in the subgroup from the time of arrival at the index post to the time of follow-up. Direct comparison of these crude rates among two or more subgroups is informative but may be misleading if the subgroups differ with respect to age or year at arrival at the index post. Observed differences in rates may be solely due to the fact that one subgroup or another was younger or was observed during a different calendar period when the risks of an event of interest could have been different.

The method chosen for correcting or adjusting the rates for the effects of imbalance with respect to those two very important variables affecting health status is described in a paper by Breslow and Day (5). The basic technique was to produce summary morbidity indices for two or more subgroups while accounting for differences among the subgroups regarding age and year of entry represented by 16 strata (age at entry groups:<35, 35-44, 45-54, 55+ years; year of entry groups: before 1961, 1961-1965, 1967-1971, 1972 and after).

Since hundreds of items had to be studied, the number of events in each stratum was very small so that rates in a particular stratum were also small. This situation usually calls for the technique of "indirect" standardization (See for example, Lilienfeld (6)). Breslow and Day's model represents an extension and refinement of this technique.

Their model applied to the FSHSS data may be briefly summarized as follows: Let P_{ij} be the number of person-years observed for persons who entered the study in the jth age at entry - year of entry stratum ($j=1,2,\cdots,16$) and the ith subgroup ($i=1,2$) for Moscow and Comparison respectively; (i may also indicate different exposure groups). Let D_{ij} be the number of events occurring among those persons during the time of arrival at the index post until follow-up. The model also assumes that the populations are sufficiently large and events sufficiently rare that the observed D_{ij} follows a Poisson distribution with expectation, $E(D_{ij}) = P_{ij}\lambda_{ij}$, where P_{ij} is considered as a fixed number and λ_{ij} is the rate of occurrence in the population i and stratum j. This is a reasonable assumption in the present data since typical event rates were low and the average time observed in a given situation was about ten years and at most, 25 years, so that a constant risk per person per unit time within any particular stratum was a reasonable assumption.

The λ_{ij} are combined into a summary morbidity index for each subgroup which will be referred to as Standardized Morbidity Ratios (SMBRs). The mathematical model proposes a log linear model for the rates

$$\log \lambda_{ij} = \log \theta_i + \log \varphi_j,$$

or in other words, the subgroup rates in a particular stratum are obtained from multiplicative contributions of a subgroup (θ_i) and a stratum (φ_j). The model thus assumes that the ratio of the rates of one subgroup to another is constant over all strata and that the ratio of the rates of one stratum to

another is constant over all subgroups, subject to statistical variation.

The statistical analysis of this model has a number of attractive features:

1) Estimates of the effect of θ_i and γ_j are obtained using iterative maximum likelihood techniques which always converge and do not require a matrix inversion.

2) SMBRs may be interpreted as the ratio of the rate of occurrence in subgroup i to the rate of occurrence in the total population adjusted for stratum difference—i.e. an SMBR of 1.0 for a subgroup indicates no difference between the subgroup event rate and the total event rate. Values greater than 1 indicate a higher event rate and those less than 1, a lower event rate than the total.

3) Likelihood ratio tests for equality of SMBRs over subgroups are easily obtained. Significance tests were not performed unless the total events available in a comparison was at least 10.

4) Goodness of fit tests of the log linear assumption are also easily obtained using likelihood methods.

5) The number of events in the standard population are equal to the number actually observed.

6) The results of the first iteration provide the usual indirectly adjusted rate taking the pooled rates for each stratum as standard rates.

All estimates of SMBRs and associated levels of statistical signifance (P-values) presented in the tables were derived using this method.

An analysis of dependents was also performed but was done in much less detail than for the employees due to the absence of certain kinds of information and, more importantly, to the time limit imposed on the study. However, it was possible to analyze mortality experience of dependents classified according to whether or not they had lived at the posts and, if they had not lived at the post, whether they were dependents of employees who were in Moscow or in one of the Comparison posts.

Since many of the dependents had had three to four medical examinations and these had been abstracted, it was possible to analyze them for reported medical conditions (Coded with the ICDA, 8th revision)(4). The other source of

morbidity information that was analyzed was the Health History Questionnaire of the employee or spouse which provided information on many health problems of children.

SECTION 3 - RESULTS OF TECHNICAL PERFORMANCE

The logistical complexity of the study as well as the difficulties encountered in the conduct of a study of a mobile group of governmental employees is clearly apparent from the description presented in Section 1. It is therefore important to review the results of the technical performance of the various procedures used in the study as a basis for evaluating the findings.

The technical performance of the Foreign Service Health Status Study can be described in terms of its components: the success of tracing the ascertained study population, abstracting the medical records, the response to (or return of) the Health History Questionnaire (HHQ), the validation of the conditions and diseases reported on the HHQ and the ascertainment of deaths and acquisition of death certificates. A total of 4,388 employees were identified, of whom, 2,992 (68%) were State Department employees (SD) and the remaining 32%, non-State Department employees (NSD). Included in the State Department group are the employees of the State Department, the United States Information Agency (USIA) and the Foreign Agriculture Service (FAS), all of whom share a common medical record system. A detailed breakdown of the groups comprising the study population is shown in Table 3.1. Of the 4,338 total employees identified, 1,827 (42%) had served in Moscow and the remainder in Comparison posts only. Of the Moscow group, 1,149 (63%) were State Department employees, which was lower than in the Comparison posts (63% as compared to 72%).

SUCCESS OF FOLLOW-UP

The success of the tracing effort is summarized in Table 3.2. Overall, 97% of the SD employees were traced as compared to 92% of the NSD group. The follow-up success varied depending upon the status of the employee (current

Table 3.1 Percentage distribution of employees in Moscow and comparison posts by government agency

Government Agency	Posts					
	Moscow		Comparison		Total	
	No.	%	No.	%	No.	% Moscow of total
Total Study Population	1827	100%	2561	100%	4388	42%
State Department Total	1149	63%	1843	72%	2992	38%
State Department	1065	58%	1682	66%	2747	39%
U.S. Information Agency	70	4%	153	6%	223	31%
Foreign Agriculture Service	14	1%	8	<1%	22	64%
Non-State Department Total	678	37%	718	28%	1396	49%
Army	175	10%	198	8%	373	47%
Navy	64	4%	20	1%	84	76%
Air Force	125	7%	156	6%	281	44%
U.S. Marine Security Guard	255	14%	264	10%	519	49%
Defense Civilian Employee and Defense Department unspecified	59	3%	80	3%	139	42%

Source TPI..18

TP2

Table 3.2 Final status of tracing, Medical Records reviewed, and response to Health History Questionnaire for State and Non-State Department employees by post

Final Status	State Department Employees			Non-State Department Employees		
	Moscow	Comparison	Total	Moscow	Comparison	Total
Total number of employees (100%)	1149	1843	2992	678	718	1396
Traced (% of total)	95%	98%	97%	92%	92%	92%
Medical Records Reviewed (% of total)	81%	85%	84%	41%	44%	43%
Number and percent of total sent Health History Questionnaire	1040 (91%)	1643 (89%)	2683(90%)	582 (86%)	602 (84%)	1184(85%)
Returned Health History Questionnaire (% of those sent)	59%	48%	52%	43%	34%	38%

Source: TP_1--11, 12, 13

versus retired) and the source of the employee's name. Table 3.3 presents these results in detail. There were only two sources of names of NSD employees: lists from the State Department and another employee's tracing questionnaire. Overall, the success in tracing the study population was similar for Moscow and the Comparison posts. The follow-up rate for SD employees whose names were obtained from Current Employee lists and Service Record Cards was 100%. This is due to the fact that all of these individuals had a date of last observation with respect to their vital status. For the vast majority (97%), their current status was known as of June 1976. The frequency of individuals traced, who were identified from others' tracing questionnaires was 93% for the SD employees and 72% for NSD employees. The lower tracing frequency for NSD employees is due to the lesser effort expended for these employees; a decision that was made in January 1978: based on time constraints and the absence of sufficient information to trace this group.

Complete follow-up for an individual consists of knowing the number of years observed, age of entry into the study and year of arrival at the index post. Table 3.4 presents the results of the completed follow-up. Information on these items was obtained for 98% of the traced State Department and for 93% of traced non-State Department employees.

The last follow-up date, which for the vast majority was during 1976-78, was ascertained from a number of sources including the Health History and Tracing Questionnaires. Other sources included the Service Record Card, the Medical Abstract, State Department and Military locators and a variety of other miscellaneous sources (Appendix 6). Table 3.5 shows the distribution of these sources on all traced individuals for SD and NSD employees, by post. The last follow-up date for almost all of the SD employees who had served in Moscow (92%) was obtained from either the Health History or the Tracing

TP3

Table 3.3 Percentage of State and Non-State Department employees traced by source of name and post

Source of Name	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	% Traced	No.	% Traced	No.	% Traced	No.	% Traced	No.	% Traced	No.	% Traced
Total	1149	95%	1843	98%	2992	97%	678	92%	718	92%	1396	92%
Current Employee (Computer List)	409	100%	572	100%	981	100%						
Retired Employee (Service Record Card)	352	100%	700	100%	1052	100%			(NOT APPLICABLE)			
Tracing Questionnaires	176	95%	288	92%	464	93%	87	69%	104	74%	191	72%
Other Lists from State Department	212	79%	283	94%	495	88%	591	95%	614	94%	1205	95%

Source: TP1--14

TP4

Table 3.4 Distribution of State and Non-State Department employees according to completed follow-up status and post

Completed Follow-Up Status	State Department Employees			Non-State Department Employees		
	Moscow	Comparison	Total	Moscow	Comparison	Total
Total traced	1097	1803	2900	622	657	1279
(1) Information on years observed, age at entry, year arrival available						
Number	1075	1770	2845	580	608	1188
Percent	98%	98%	98%	93%	92%	93%
(2) Information on any one of items listed in (1) is missing						
Number	22	33	55	42	49	91
Percent	2%	2%	2%	7%	8%	7%

Source: TPI-- 20

TP5

Table 3.5 Distribution of State and Non-State Department employees according to source of last follow-up date, and post

Source of Last Follow-Up Date	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total with Follow-Up Date	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Health History Questionnaire	496	45%	637	35%	1133	39%	212	34%	193	29%	405	32%
Tracing Questionnaire	515	47%	922	51%	1437	50%	335	54%	392	60%	727	57%
Service Record Card	12	1%	53	3%	65	2%	7	1%	0	0	7	1%
Medical Abstract	9	1%	19	1%	28	1%	7	1%	8	1%	15	1%
State Department or Military locators & lists	34	3%	84	5%	118	4%	37	6%	48	7%	85	7%
Phone Company, Post Office, Town clerk, Relatives, etc.	17	2%	54	3%	71	2%	14	2%	14	2%	28	2%
Other*	14	1%	34	2%	48	2%	10	2%	2	0	12	1%

Source TP1--19

*Includes refusals, miscellaneous correspondence with different individuals

Questionnaire, as compared to 88% for the NSD employees who had served in Moscow. These two sources also comprised the main source of follow-up information for the Comparison posts - 86% for SD employees and 89% for NSD employees. The contribution to follow-up from the other sources is shown in Table 3.5, and it is noteworthy that the medical abstracts were used to obtain follow-up dates in only 1% of the employees in all four groups. It should be emphasized that the percent traced was similar in the Moscow and Comparison groups.

ABSTRACTING THE MEDICAL RECORDS

As mentioned earlier, attempts were made to abstract all medical records for employees and their dependents. These attempts met with varying success for reasons that were described in Section 1. Overall, 84% of SD employees' medical records were located and abstracted as compared to 43% of NSD employees. Considering the difficulty and the length of time necessary to obtain records for current military personnel this differential is not surprising.

Table 3.6 presents the percentage of employees on whom medical abstracts were obtained by the source of the name. For SD current employees, 99% of their medical records were abstracted and 93% for retired employees. The percentages were generally similar for the Moscow and Comparison groups except for the names of employees obtained from a variety of other lists from the State Department. In this category, the percent was 62% for the Moscow group as compared to 87% for the Comparison group. The best success rate in abstracting the medical records of NSD employees was 48% for those identified in lists provided by the State Department. This percentage was still low due in large part to difficulties in obtaining the necessary medical records; with additional time and effort, this percentage could have been considerably increased.

TP6

Table 3.6 Number and percent with medical abstracts reviewed for State and Non-State Department employees by source of name and post

Source of Name	Number and Percent with Medical Abstracts among Employees											
	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total Employees	1149	81%	1843	85%	2992	84%	678	41%	718	44%	1396	43%
Current Employee (Computer List)	409	100%	572	99%	981	99%						
Retired Employee (Service Record Card)	352	93%	700	93%	1052	93%			(NOT APPLICABLE)			
Tracing Questionnaires	176	36%	288	38%	464	37%	87	11%	104	11%	191	11%
Other Lists from State Department	212	62%	283	87%	495	76%	591	45%	614	50%	1205	48%

Source: TP1..15

The total number of subjects for whom medical abstracts were obtained is shown in Table 3.7. For SD employees, 2,500 had their records reviewed, and 37% of these had served in Moscow. In contrast, 594 NSD employees had their records reviewed, of whom 46% were in the Moscow group. The total number of medical examination records reviewed was 16,600 for SD employees and 5,110 for NSD employees. For both groups, the median number of examinations reviewed per individual was six. A detailed breakdown of the number of examinations reviewed per individual is shown in Table 3.7, but in general the four groups (SD Moscow and Comparison, NSD Moscow and Comparison) were very similar.

RESPONSE TO HEALTH HISTORY QUESTIONNAIRE

A total of 3,867 Health History Questionnaires (HHQs) were mailed to employees. For SD employees, mailing of HHQs was not attempted for 10% and for 15% of NSD employees, because of insufficient information necessary for mailing purposes or because the individual was deceased. However, these percentages were similar for the Moscow and Comparison groups within each employee group. Of those HHQs that were mailed, SD employees responded (either directly by mail or by telephone) with an overall frequency of 52% and 59% for those who had served in Moscow. The response of NSD employees was not nearly as high, with an overall response of 38% and 43% from those who had served in Moscow. The main reason for the differential response is that the phone interview efforts (described in Section 1) were concentrated on State Department employees. These results are shown in Table 3.8. The percent refusals by SD employees was about 8%, for NSD employees, 2%. This differential is again due to the decreased effort in telephone interviews for the NSD group.

TP7

Table 3.7 Summary of results of abstracting Medical Records of State and Non-State Department employees by post

Examinations Reviewed	State Department Employees				Non-State Department Employees			
	Moscow		Comparison		Moscow		Comparison	
	No.	%	No.	%	No.	%	No.	%
All employees with Medical Abstracts	929	100%	1571	100%	276	100%	318	100%
Total number of examinations reviewed	6351	--	10249	--	2222	--	2888	--
Median number of examinations reviewed per individual	6	--	6	--	6	--	6	--
Number of examinations reviewed per individual								
1	54	6%	106	7%	11	4%	14	4%
2	65	7%	127	8%	14	5%	17	5%
3	75	8%	152	10%	38	14%	29	9%
4	85	9%	148	9%	41	15%	42	13%
5	107	11%	175	11%	30	11%	38	12%
6	90	10%	133	9%	23	8%	21	7%
7	71	8%	133	9%	23	8%	14	4%
8	71	8%	117	7%	17	6%	16	5%
9	70	8%	114	7%	8	3%	17	5%
10+	241	26%	366	23%	71	26%	110	35%

Table 3.8 Final results on Health History Questionnaire (HHQ) among State Department and Non-State Department employees by post

Final Results	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total traced employees	1149	100%	1843	100%	2992	100%	678	100%	718	100%	1396	100%
Total HHQs mailed	1040	91%	1643	89%	2683	90%	582	86%	602	84%	1184	85%
Mailing not attempted	109	9%	200	11%	309	10%	96	14%	116	16%	212	15%
Total completed HHQs (% of those mailed)	616	59%	782	48%	1398	52%	253	43%	202	34%	455	38%
Total incomplete	424	41%	861	52%	1285	48%	329	57%	400	66%	729	62%
. Refusals	29	7%	73	8%	102	8%	13	4%	5	1%	18	2%
Attempted but no response	395	93%	788	92%	1183	92%	316	96%	395	99%	711	98%

Source: TP1..21

The response to the HHQ according to the source of the employee's name is presented in Table 3.9. For the SD groups the best response came from current employees who had served in Moscow, 68%, with the retired employees identified from SRCs responding at a rate of 58%. About 45% of the employees whose names came from Tracing Questionnaires of "other" State Department lists, responded. In general, the response rate was considerably better from those who had served in Moscow than those who had served in the Comparison embassies, except for the NSD group identified from the Tracing Questionnaires, which represents a small percentage of the total number of individuals.

The percentage distribution of the method by which the HHQ was obtained is shown in Table 3.10. Sixty-seven percent of the State Department Employee's HHQs were obtained by mail in contrast to 72% of the non-State Department employees. The remaining HHQs were obtained over the phone either in their entirety or in an abbreviated version which was mainly used for those individuals who are currently residing outside of the U.S. or for those unwilling to complete the entire questionnaire. Of the total number of completed HHQs only 6 to 7% consisted of the abbreviated version.

The higher percentage of completed HHQs among SD employees than among NSD employees (Table 3.8) was mainly due to the fact that a much greater effort was expended in obtaining phone interviews for State Department employees.

ASCERTAINMENT OF DEATHS

Of the total 4,179 employees who were traced, 194, or approximately 5%, had died. Of these, sufficient information for inclusion into an analysis of the total mortality experience was obtained for 181. In 13 deaths, it was only possible to ascertain that the employee was dead and information on one or more such factors as age, year of entry into the study or the year of death was not obtainable. Therefore, these 13 deaths could not be utilized in any of the analyses.

TP9

Table 3.9 Percentage of State Department and Non-State Department employees whose Health History Questionnaires were completed by source of name and post

Source of Name	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No. Mailed	% Compl.	No. Mailed	% Compl.	No. Mailed	% Compl.	No. Mailed	% Compl.	No. Mailed	% Compl.	No. Mailed	% Compl.
Total Employees	1040	59%	1643	48%	2683	52%	582	43%	602	34%	1184	38%
Current Employee (Computer List)	409	68%	567	47%	976	56%	(NOT APPLICABLE)					
Retired Employee (Service Record Card)	307	58%	584	52%	891	54%						
Tracing Questionnaires	166	51%	250	41%	416	45%	57	28%	70	30%	127	29%
Other Lists from State Department	158	47%	242	46%	400	46%	525	45%	532	34%	1057	40%

TP1··16

TP10

Table 3.10 Number and percent of State Department and Non-State Department employees by method of completion of Health History Questionnaire and post

Method of Completion of Health History Questionnaire	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All questionnaires completed	616	100%	782	100%	1398	100%	253	100%	202	100%	455	100%
Completed by mail	429	70%	508	65%	937	67%	178	70%	148	73%	326	72%
Completed by phone	187	30%	274	35%	461	33%	75	30%	54	27%	129	28%
Regular version	143	76%	219	80%	362	79%	62	83%	39	72%	101	78%
Abbreviated version	44	23%	55	20%	99	21%	13	17%	15	28%	28	22%

Source: TP1--17

Death certificates indicating the cause of death were obtained for approximately 125 or 65% of the 194 dead employees. As shown in Table 3.11 a higher percentage of death certificates was obtained for the Moscow than the Comparison groups (73% versus 60%) for SD employees. Among NSD employees the converse was the case (69% for the Comparison versus 63% for the Moscow group).

VALIDATION OF DISEASE INFORMATION REPORTED ON HEALTH HISTORY QUESTIONNAIRE

In Section 1, the procedure for validating the information obtained on the HHQ was presented. For all exposed employees in the Moscow group and a 10% sample of the remainder, letters were sent to the hospitals, physicians and other health care facilities in an attempt to validate the reported information. The response to these requests was excellent.

The diseases and conditions reported on the HHQ were compared with these reports and reviewed by the principal investigator. They were remarkably consistent. In about 5 to 10% of employees, the health care facility indicated conditions that had not been reported in the HHQ. This was balanced by the fact that for about 5 to 10% of employees, conditions were reported on the HHQ that were not reported by the health care source. This consistency probably reflects the greater awareness of medical matters in this type of study population than in the general population. In fact, their use of medical terminology for the disease conditions, etc. was quite sophisticated.

SUMMARY

Despite the complexity and difficulties encountered in studying such a mobile population, and the time constraints of the study, the technical performance turned out to be better than was expected in 1977, particularly for the State Department employees. It is clear that studying a military

DB

Table 3.11 Number and percent of traced State Department and Non-State Department employees by source of death reports and post

Source of Death Reports	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total traced group	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Total dead	37	3% (100%)	106	6% (100%)	143	5% (100%)	19	3% (100%)	32	5% (100%)	51	4% (100%)
U. S. death certificate	27	73%	64	60%	91	64%	12	63%	22	69%	34	67%
Report of death of an American citizen	5	14%	18	17%	23	16%	1	5%	0	0	1	2%
Family member	4	11%	17	16%	21	15%	4	21%	7	22%	11	22%
Other[1]	1	3%	7	7%	8	6%	2	11%	3	9%	5	10%

[1]Letter from funeral director, Departments of Vital Records or hospital, foreign death certificate, military casualty division.

Source: D1..12

population in the absence of a systematic and centralized personnel coordinating system requires considerably more time and effort than was available for this study. However, it must be admitted that the study staff was completely surprised at the relatively low-level of response of this highly educated population to the mailed Health History Questionnaire. At the time of the initiation of the study, it was thought that these employees would have been more responsive to such requests than they actually were.

However, the important consideration is that the employees in the Moscow and the Comparison groups were generally similar in terms of their performance with respect to the various components of the study, with few exceptions. This is important in interpreting the findings of the study, which is based on the comparison of the employees in the Moscow and Comparison posts.

SECTION 4 - DESCRIPTION OF THE STUDY POPULATION OF EMPLOYEES

CHARACTERISTICS OF TRACED INDIVIDUALS

A total of 4,179 employees were traced and this section describes the characteristics of this traced group of individuals. Seventy percent of the traced individuals were State Department employees (SD) and 30% non-State Department employees (NSD). Of the total number of employees, 92% were males; among the SD employees, 64% were males. The distribution of the traced subjects by age at arrival at the index post is shown in Table 4.1. The NSD employees were younger when they arrived at the index post; 27% of NSD employees were less than 25 years of age in contrast to 4% of SD employees. The distribution of ages at arrival was similar for Moscow and Comparison groups for SD male and female employees. However, for NSD male employees, the ages at arrival at Moscow were somewhat younger than at the Comparison posts. Among female NSD employees there were differences in ages at arrival at Moscow and Comparison posts, but the number of females was so small that these differences were relatively insignificant. The majority of SD employees (74%) arrived at the index post between 25 and 44 years of age compared with 54% in the NSD group. Twenty seven percent of the NSD employees were under 25 years of age upon arrival at the index post; only 4% of the SD employees were under

The distribution of traced employees by year of arrival at the index post is presented in Table 4.2. About a third of the employees in the study, arrived before 1961 and thus have been followed for 15 to 20 years. The distribution of arrival year is very similar for SD and NSD employees; a little more than half of the employees (57% State and 54% non-State) arrived prior to 1967. The years of arrival were similar for the Moscow and Comparison groups except for a higher percentage of Comparison State Department employees who arrived prior to 1961.

D1

Table 4.1 Distribution of traced State and Non-State Department employees by sex, age at arrival at index post and post

Sex	Age at Arrival at Index Post	State Department Employees						Non-State Department Employees					
		Moscow		Comparison		Total		Moscow		Comparison		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	<25	26	4%	30	3%	56	3%	172	29%	164	28%	336	29%
	25-34	323	45%	486	43%	809	44%	168	28%	140	24%	308	26%
	35-44	234	33%	356	32%	590	32%	168	28%	150	26%	318	27%
	45-54	94	13%	175	16%	269	15%	35	6%	81	14%	116	10%
	55+	16	2%	62	6%	78	4%	10	2%	4	1%	14	1%
	Unknown	21	3%	18	2%	39	2%	42	7%	44	8%	86	7%
Total Male		714	100%	1127	100%	1841	100%	595	100%	583	100%	1178	100%
% of Total Group			65%		63%		64%		96%		89%		92%
Female	<25	30	8%	38	6%	68	6%	3	11%	9	12%	12	12%
	25-34	148	39%	263	39%	411	39%	9	33%	30	41%	39	39%
	35-44	117	31%	216	32%	333	31%	12	44%	17	23%	29	29%
	45-54	63	16%	102	15%	165	16%	1	4%	12	16%	13	13%
	55+	21	5%	42	6%	63	6%	1	4%	1	1%	2	2%
	Unknown	4	1%	15	2%	19	2%	1	4%	5	7%	6	6%
Total Female		383	100%	676	100%	1059	100%	27	100%	74	100%	101	100%
% of Total Group			35%		37%		37%		4%		11%		8%
Both Sexes	<25	56	5%	68	4%	124	4%	175	28%	173	26%	348	27%
	25-34	471	43%	749	42%	1220	42%	177	29%	170	26%	347	27%
	35-44	351	32%	572	32%	923	32%	180	29%	167	25%	347	27%
	45-54	157	14%	277	15%	434	15%	36	6%	93	14%	129	10%
	55+	37	3%	104	6%	141	5%	11	2%	5	1%	16	1%
	Unknown	25	2%	33	2%	58	2%	43	7%	49	8%	92	7%
Total Group		1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%

Source: D1..1,2,3

D2

Table 4.2 Distribution of traced State Department and Non-State Department employees by year of arrival at first study post and post

Year of Arrival at First Study Post	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total group	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Before 1961	326	30%	700	39%	1026	35%	164	26%	176	27%	340	27%
1961-1966	259	24%	372	21%	631	22%	163	26%	178	27%	341	27%
1967-1971	213	19%	333	19%	546	19%	146	24%	137	21%	283	22%
1972-1976	293	27%	390	22%	683	24%	144	23%	163	25%	307	24%
Unknown Year	6	1%	8	0	14	1%	5	1%	3	1%	8	1%

Source: D1..4

The distribution of the traced subjects according to their posts of service is shown in Table 4.3. Of the SD employees, 25% only served in Moscow as compared to 41% of the NSD employees. In general, a higher percentage of the NSD group served at only one study post than did the SD employees (89% vs 77%). This probably is due to the inadequate information on the completed service record for NSD employees and to the fact that SD employees actually do serve at multiple posts in Eastern Europe more often than the military, who may be assigned there only once. After Moscow, Belgrade and Warsaw were the most frequent service posts for both the SD and NSD employees; for the SD employees, 19% served only in Belgrade and 11% only in Warsaw; for the NSD employees, 15 % served in Warsaw and 10% in Belgrade only. Overall, 23% of the SD groups served at multiple posts as compared to 11% of the NSD group.

The total number of tours served by each employee at the study posts varied from only one up to 8 or more, in a few instances. Among the SD employees, 77% served only one tour in one of the selected study posts as compared to 89% of the NSD employees. Also, the Moscow group had more tours at the various study posts than the Comparison group for both SD and NSD employees. These results are presented in detail in Table 4.4. (The discrepancies between the numbers in Tables 4.3 and 4.4 result from the fact that unknown post combinations were listed separately in Table 4.3.) Of those who had served in Moscow, for 67% of the SD employees, and 85% of NSD employees, it was their only tour at a study post. Furthermore, 90% of the SD and 96% of the NSD employees who served in Moscow served only one tour there.

The distribution of the study group according to the number of years

D3

Table 4.3 Distribution of traced State Department and Non-State Department employees by service post

Service Post	State Department Employees		Non-State Department Employees	
	No.	%	No.	%
Total Group	2900	100%	1279	100%
Moscow only	738	25%	527	41%
Budapest only	135	5%	87	7%
Leningrad only	14	<1%	13	1%
Prague only	155	5%	64	5%
Warsaw only	312	11%	193	15%
Belgrade only	561	19%	133	10%
Bucharest only	173	6%	69	5%
Sofia only	96	3%	56	4%
Zagreb only	59	2%	1	<1%
Total at single post	2243	77%	1143	89%
Moscow and any comparison post	159	12%	95	7%
Any combination of comparison posts	298	10%	41	3%
Total at multiple posts	657	23%	136	11%

Source: D1..5

Table 4.4 Distribution of traced State Department and Non-State Department employees by number of tours and post

Number of Tours	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total Employees	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
No. of tours, all posts												
1	738	67%	1505	83%	2243	77%	527	85%	616	94%	1143	89%
2	217	20%	231	13%	448	15%	76	12%	31	5%	107	8%
3 or more	142	13%	67	4%	209	7%	19	3%	10	2%	29	2%
No. of tours, Moscow												
0	0	-					0	0%				
1	986	90%					599	96%				
2	92	8%	(NOT APPLICABLE)				23	4%	(NOT APPLICABLE)			
3 or more	19	2%					0	-				

Source: D1..6,7,8

served at various study posts is shown in Table 4.5. Overall, 32% of SD employees as compared to 45% of NSD employees spent less than two years at any one of the study posts. About half of each employee group spent 2-3 years at a study post. For those who had served only in Moscow, 42% of the State Department employees served less than two years as compared to 51% of NSD employees and 53% of the SD employees served 2-3 years as compared to 48% of the non-State group.

The distributions of the ages and places at the time when the respondents were located are presented in Tables 4.6 and 4.7; the median age at the time when located was approximately 50 for SD employees and about 45 for NSD employees. This was true for both Moscow and Comparison posts. Nearly a third of the SD employees were over age 55 as compared to 22% of the NSD employees. In both groups, the proportion over age 55 when located was higher for those who had been at Comparison posts than in Moscow.

Over one third (35%) of the SD individuals resided outside of the United States at the time they were located, compared with 12% of the NSD individuals. The Moscow employees did not differ from the Comparison employees in this respect in either group. Details of the place of residence at the time of location are shown in Table 4.7.

COMPARISON OF INDIVIDUALS WITH AND WITHOUT MEDICAL ABSTRACT

A comparison was made of selected characteristics of those individuals whose medical record was abstracted with those where this was not done for a variety of reasons. For each employee group, the following characteristics were compared: post, sex, age at arrival, year of arrival, total number of tours and location at follow-up. The detailed results of this analysis

D5

Table 4.5 Distribution of traced State Department and Non-State Department employees by number of years at post

Number of Years[1] at Post	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total employees, all posts	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Less than 2 years	350	32%	564	31%	914	32%	292	47%	285	43%	577	45%
2-3 years	546	50%	1036	58%	1582	55%	302	49%	341	52%	643	50%
4 and more years	201	18%	203	11%	404	14%	28	5%	31	5%	59	5%
Total employees at Moscow	1097	100%					622	100%				
Less than 2 years	465	42%					315	51%				
2-3 years	576	53%	(NOT APPLICABLE)				296	48%	(NOT APPLICABLE)			
4 and more years	56	5%					11	2%				

[1]The less than 2 years category includes some employees with a single tour but with the ending date unknown.

Source D1..9,10,11

D6

Table 4.6 Distribution of traced State Department and Non-State Department employees by age at time when located and post

Age at Time When Located (Years)	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total employees	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Under 25	7	1%	5	<1%	12	<1%	26	4%	25	4%	51	4%
25-34	114	10%	170	9%	284	10%	122	20%	131	20%	253	20%
35-44	310	28%	432	24%	742	26%	167	27%	153	23%	320	25%
45-54	387	35%	545	30%	932	32%	155	25%	135	21%	290	23%
55 and over	263	24%	626	35%	889	31%	115	18%	167	25%	282	22%
Unknown	16	1%	25	1%	41	1%	37	6%	46	7%	83	6%

Source: DEMP

Table 4.7 Distribution of traced State Department and Non-State Department employees by place at time when located and post

Place at Time of Location	State Department Employees						Non-State Department Employees					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total Group	1097	100%	1803	100%	2900	100%	622	100%	657	100%	1279	100%
Total United States	677	62%	1208	67%	1885	65%	549	88%	576	88%	1125	88%
California	56	5%	122	6%	178	6%	71	11%	84	13%	155	12%
Florida	43	4%	55	3%	98	3%	35	6%	41	6%	76	6%
Maryland	73	7%	125	7%	198	7%	30	5%	26	4%	56	4%
Virginia	190	17%	268	15%	458	16%	102	16%	88	13%	190	15%
Washington, D. C.	75	7%	158	9%	233	8%	13	2%	14	2%	27	2%
Other United States	240	22%	480	27%	720	25%	298	48%	323	49%	621	49%
Outside United States	420	38%	595	33%	1015	35%	73	12%	81	12%	154	12%
Embassy or APO	385	35%	509	28%	894	31%	66	11%	72	11%	138	11%
Private Address	35	3%	86	5%	121	4%	7	1%	9	1%	16	1%

Source D1..13

are shown in Table 4.8. In general, for the SD employees there were some differences in these characteristics between the group that had medical abstracts and those who did not. Among those whose medical records were not available for abstracting compared with those whose records were available, there were relatively more Moscow employees (41% vs 37%), more females (45% vs 35%), more individuals who were either less than 25 years of age or whose age was unknown, more individuals who arrived at the index post between 1972-1976 and slightly fewer with 2 or more tours, and finally more whose location at follow-up was inside the U.S. For the non-State Department employees, there was a higher percentage of females who did not have their records reviewed (14% vs 1%), there were more with unknown ages at arrival at study post and more arrivals between 1972-76.

PERCENTAGE RESPONSE TO HEALTH HISTORY QUESTIONNAIRE BY SELECTED CHARACTERISTICS

An examination of Table 4.9 shows that the percent response to the Health History Questionnaire by a variety of characteristics was very similar in both State Department and non-State Department employees. In both groups the response was higher for Moscow employees (56% vs 43% for State and 41% vs 31% for non-State). The response frequency did not vary greatly by sex, age, and year at arrival at post for the SD employees; it was higher for those SD employees with 2 or more tours and for those located in the United States. All those whose age and year at arrival at the post were unknown, were non-respondents. For NSD employees the response percentage was somewhat higher for the Moscow than the Comparison posts, for those under 25 years, for those arriving at the post prior to 1967, and those located in the United States than outside. For the total NSD group, the response rate was lower than for the SD group; this was true for every

Table 4.8 Comparison of selected characteristics of State Department and Non-State Department employees whose medical record was available for abstracting with those whose record was not available

Selected Characteristics		State Department Employees				Non-State Department Employees			
		Medical Record				Medical Record			
		Available for Abstracting		Not Available for Abstracting		Available for Abstracting		Not Available for Abstracting	
		No.	%	No.	%	No.	%	No.	%
Total Employees		2493	100%	407	100%	584	100%	695	100%
Post	Moscow	929	37%	168	41%	275	47%	347	50%
	Comparison	1564	63%	239	59%	309	53%	348	50%
Sex	Male	1618	65%	223	55%	580	99%	598	86%
	Female	875	35%	184	45%	4	1%	97	14%
Age at arrival at post	25 and under	70	3%	54	13%	205	35%	143	21%
	25-34	1084	44%	136	33%	129	22%	218	31%
	35-44	839	34%	84	21%	163	28%	184	26%
	45-54	381	15%	53	13%	73	12%	56	8%
	55 and over	109	4%	32	8%	6	1%	10	1%
	Unknown	10	<1%	48	12%	8	1%	84	12%
Year of arrival at post	Before 1961	863	35%	163	40%	189	32%	151	22%
	1961-1966	578	23%	53	13%	196	34%	145	21%
	1967-1971	497	20%	49	12%	128	22%	155	22%
	1972-1976	548	22%	135	33%	64	11%	243	35%
	Unknown	7	0%	7	2%	7	1%	1	0%
Total no. of tours at study posts	1	1962	79%	356	87%	547	94%	629	91%
	2 or more	531	21%	51	13%	37	6%	66	9%
Place at time of location		1548	62%						
Inside USA		945	38%	337	83%	550	94%	575	83%
Outside USA				70	17%	34	1%	120	17%

Table 4.9 The percentage response of State Department and Non-State Department employees to the Health History Questionnaire by selected characteristics

Selected Characteristics		State Department Employees				Non-State Department Employees			
		Health History Questionnaire				Health History Questionnaire			
		Respondents		Non-Respondents		Respondents		Non-Respondents	
		No.	%	No.	%	No.	%	No.	%
Total Traced Employees		1398	48%	1502	52%	455	36%	824	64%
Post	Moscow	616	56%	481	44%	253	41%	369	59%
	Comparison	782	43%	1021	57%	202	31%	455	69%
Sex	Male	866	47%	975	53%	434	27%	744	63%
	Female	532	50%	527	50%	21	21%	80	79%
Age at arrival at post	25 and under	61	49%	63	51%	157	45%	191	55%
	25-34	588	48%	632	52%	125	36%	222	64%
	35-44	461	50%	462	50%	121	35%	226	65%
	45-54	220	51%	214	49%	46	38%	83	64%
	55 and over	68	48%	73	52%	6	38%	10	62%
	Unknown	0	-	58	100%	0	-	92	100%
Year of arrival at post	Before 1961	497	48%	529	52%	126	37%	214	63%
	1961-1966	333	53%	298	47%	136	40%	205	60%
	1967-1971	260	48%	286	52%	89	31%	194	69%
	1972-1976	308	45%	375	55%	104	34%	203	66%
	Unknown	0	-	14	100%	0	-	8	100%
Total no. of tours at study posts	1	1015	46%	1194	54%	404	38%	740	62%
	2 or more	345	59%	237	41%	48	41%	55	53%
	Unknown	38	35%	71	65%	3	8%	29	91%
Place at time of location									
Inside USA		959	51%	926	49%	408	36%	717	64%
Outside USA		439	43%	576	57%	47	31%	107	69%

characteristic examined. However, within each characteristic examined, the response rates did not vary greatly for both the SD and NSD employee groups.

SECTION 5 - THE MORTALITY EXPERIENCE OF EMPLOYEES

GENERAL

For the total study population, 194 deaths were ascertained to have occurred during the study period (see Table 3.11). Of these 194 deaths, 181 or 93% were used for the statistical analysis of the mortality experience. Information on date of birth or years spent at any post was not available for the remaining 13 deaths and therefore they were excluded from the analysis.

United States death certificates were obtained for 125 or 64% of the total deaths. For an additional 24 deaths (12%), information was obtained from the report of death of an American citizen. Information on the remaining deaths was obtained from different sources (see Table 3.11). Therefore, in interpreting the analysis of the mortality experience by cause of death, it is necessary to take into account the variations in causes of death resulting from the several different sources of validation. Since 36% of the information on causes of death was derived from sources other than the U.S. death certificate and the comparisons are with the U.S. mortality experience, the results must be interpreted with caution. However, the associated problems were present in nearly equal degrees in the Moscow (70% with death certificates) and the Comparison (64% with death certificates) groups.

TOTAL MORTALITY EXPERIENCE

The method used to analyze the mortality experience has been described in Section 2. Standardized Mortality Ratios and 95% confidence limits were computed for various subgroups in the study population. These SMRs are presented for the SD and NSD employees in the Moscow and Comparison posts by sex in Table 5.1. For males, the SMRs ranged from 0.29 to 0.60 for the subgroups. These SMRs represent a comparison of the mortality experience for a particular subgroup with the U.S. population taking into account age,

MT1

Table 5.1 Standardized mortality ratios (SMR)[1], person years, observed number of deaths, and confidence limits (C.L.)[2] by sex and posts of service[3] for State and Non-State Department employees

Sex	Service Post	Total Group			State Department Employees			Non-State Department Employees		
		Person Years	Observed Deaths	SMR (95% C.L.)	Person Years	Observed Deaths	SMR (95% C.L.)	Person Years	Observed Deaths	SMR (95% C.L.)
Males	Moscow only	10923	26	0.42 (0.3,0.6)	5135	14	0.43 (0.2,0.7)	5788	12	0.39 (0.2,0.7)
	Comparison only	20537	102	0.55 (0.5,0.7)	14076	75	0.53 (0.4,0.7)	6461	27	0.60 (0.4,0.9)
	Both Moscow and Comparison	4172	12	0.43 (0.2,0.8)	3222	10	0.48 (0.2,0.9)	950	2	0.29 (0.0,1.0)
	Total Male	35632	140	0.51 (0.4,0.6)	22433	99	0.51 (0.4,0.6)	13199	41	0.50 (0.4,0.7)
Females	Moscow only	3131	10	1.0 (0.5,1.9)	2975	9	0.96 (0.4,1.8)	156	1	4.0 (0.1,22.3)
	Comparison only	8977	30	0.79 (0.5,1.1)	8205	28	0.80 (0.5,1.2)	772	2	0.65 (0.1,2.3)
	Both Moscow and Comparison	1295	1	0.22 (0.0,1.2)	1233	1	0.24 (0.0,1.3)	62	0	0 - -
	Total Female	13403	41	0.78 (0.6,1.1)	12413	38	0.78 (0.6,1.1)	990	3	0.81 (0.2,2.4)

[1]SMR computed by using United States mortality experience specific for sex,color, age and calendar time applied to the study persons from their time of arrival at first study post to time of follow-up to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

[3]Post of service classes: [illegible]ved in Moscow only, served in [illegible]parison posts only, and served [illegible]both Moscow and [illegible] (for the subject's follow-up began with arrival at first study post whether Moscow or Comparison).

color and calendar year. Thus, for male SD employees in Moscow the SMR of 0.43 means that their mortality experience was 43% of that of the male population of the United States. This lower mortality experience is not totally unexpected since it represents what has been described as the "healthy worker effect" which results from the selection of healthy individuals for employment in the different government agencies. In addition, the degree of selection is probably even greater for assignment to these study posts. The SMRs for Moscow SD and NSD employees were lower than those for the Comparison posts, probably reflecting the greater degree of selection for Moscow. The confidence limits of these SMRs for Moscow and the Comparison posts indicate a marked similarity of the male mortality experience in these posts.

The mortality experience of the NDS female employees is based on only three deaths, one in Moscow and two in the Comparison posts. These numbers are reflected in the very broad confidence limits in the various subgroups and are too small for any meaningful comment. For female SD employees, the SMRs are 0.96 for Moscow and 0.80 for Comparison posts. Thus the female employees have had a mortality experience similar to that of the white female population of the United States. The female mortality experience was less favorable than that of the male employees. This was most likely due to differential selection for health status prior to arrival at the study posts. However, it is clear that there was no difference in mortality experience between the Moscow and the Comparison posts for either males or females.

In a similar manner, the mortality experience was examined for each post separately. It was necessary to combine the SD and NSD employees because of the small number of deaths. In addition, the tracing success was similar for the SD and NSD groups, which further justifies this combination (Table 5.2). The similarity of the mortality experiences for each of these

Table 5.2 All cause standardized mortality ratios (SMR)[1], observed and expected numbers of deaths[2], and confidence limits (C.L.)[3] by service post and sex (State and Non-State Department employees combined)

	Males				Females			
Service Post	Observed Deaths	Expected Deaths	SMR	95% C.L.	Observed Deaths	Expected Deaths	SMR	95% C.L.
Total Group	138	274.6	0.50	(0.4,0.6)	41	51.8	0.79	(0.6,1.1)
Moscow only	26	63.0	0.42	(0.3,0.6)	10	9.5	1.1	(0.5,1.9)
Budapest only	18	20.1	0.90	(0.5,1.4)	3	2.8	1.1	(0.2,3.2)
Leningrad only	0	0.2	0.00	--	0	0.0	0.00	--
Prague only	7	14.2	0.49	(0.2,1.0)	1	3.4	0.30	(0.0,1.7)
Warsaw only	18	32.3	0.56	(0.3,0.9)	3	6.7	0.45	(0.1,1.3)
Belgrade only	35	70.1	0.50	(0.3,0.7)	14	15.4	0.91	(0.5,1.5)
Bucharest only	8	15.4	0.52	(0.2,1.0)	2	2.5	0.79	(0.1,2.9)
Sofia only	6	4.8	1.2	(0.4,2.6)	0	1.2	0.00	--
Zagreb only	2	5.2	0.38	(0.0,1.4)	2	1.5	1.3	(0.2,4.7)
Total at single post	120	225.3	0.53	(0.4,0.6)	35	43.0	0.81	(0.6,1.1)
Moscow and any comparison post	10	27.1	0.37	(0.2,0.7)	1	4.5	0.22	(0.0,1.2)
Any combination of comparison posts	8	22.2	0.36	(0.2,0.7)	5	4.3	1.20	(0.4,2.8)
Total at multiple posts	18	49.3	0.37	(0.2,0.6)	6	8.8	0.68	(0.2,1.5)

[1]SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study persons from their time of arrival at index study post (Moscow for the Moscow subjects and the first comparison post of service for the comparison subjects) to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]There were 2 male deaths from the Moscow group excluded from this table because date of arrival at the Moscow Embassy was unknown.

[3]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed

posts is quite remarkable. Among females, the SMRs were greater than one for Moscow only, Budapest only, Zagreb only, and for any combination of posts. However, the confidence limits were rather broad and indicate that these SMRs were not statistically significant. As previously noted, the number of deaths for females is relatively small, making it difficult to derive any firm inferences.

Section 1 indicated that the microwave dosage in Moscow varied during the study period. Consequently, it was of interest to determine the mortality experience by year of arrival in Moscow (Table 5.3). For males, the SMRs were essentially the same for the different time periods.

For females the SMRs, which were 2.2 for 1967-1971 and 1.9 for 1972-1976, were higher than the SMRs for the earlier time periods. However, the confidence limits indicate that these differences were not statistically significant. Despite this, it was of interest to determine the specific causes of these seven female deaths for the period 1967-1976. During 1967-1971, the five female deaths were one each from breast cancer, uterine cancer, skin cancer (not melanoma), leukemia and senility (including other and ill-defined causes). For the period 1972-1976, the two deaths were from breast cancer and uterine cancer. Of these seven deaths, six were from cancer of four different sites. Each of these cancer sites has different epidemiological risk factors associated with it, such as later age at first pregnancy for breast cancer and early age at first coitus for cervical cancer. Consequently it is difficult, if not impossible to determine their causes. Additional data will be presented later in this section on the relative proportion of specific causes of death in the Moscow and Comparison groups.

Table 5.3 All cause standardized mortality ratios (SMR)[1], person years, observed number of deaths[2], and confidence limits (C.L.)[3] for combined State and Non-State Department employees who were ever in Moscow by year of arrival and sex

Year of Arrival Moscow	Males			Females		
	Person Years	Observed No. of Deaths	SMR (95% C.L.)	Person Years	Observed No. of Deaths	SMR (95% C.L.)
Total	14088	36	0.42 (0.3,0.6)	4018	11	0.85 (0.4,1.5)
1953-1960	6799	27	0.54 (0.4,0.8)	1830	3	0.48 (0.1,1.4)
1961-1966	4122	4	0.18 (0.0,0.5)	1032	1	0.31 (0.0,1.7)
1967-1971	2110	3	0.37 (0.1,1.1)	779	5	2.2 (0.7,5.1)
1972-1976	1057	2	0.43 (0.1,1.6)	377	2	1.9 (0.2,6.9)

[1]SMR computed by using United States mortality experience specific for sex,color, age and calendar time applied to the study persons from their time of arrival at index study post (Moscow for the Moscow subjects and the first comparison post of service for the comparison subjects) to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]There were 2 male deaths from the Moscow group excluded from this table because date of arrival at the Moscow Embassy was unknown.

[3]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

Source: MTMON3

The SMRs by source of name for Moscow and Comparison posts are presented for males in Table 5.4 and for females in Table 5.5. No significant differences were evident between the Moscow and Comparison posts' mortality experience.

The mortality experience by selected cause groups (7) is shown in Table 5.6. The deaths from selected malignant neoplasms had higher SMRs than other selected cause groups, although the confidence limits indicate that they were not statistically significantly different from that of the United States. However, the presence of selectivity and an SMR of about 0.5 for mortality from all causes are sufficient reasons for the higher SMRs to stand out; for all malignant neoplasms they are 0.89 for Moscow and 1.1 for Comparison posts.

In reviewing the SMRs for selected malignancies, leukemia had an SMR of 2.5 (based on 2 observed deaths) for the Moscow group and 1.8 (based on 3 observed deaths) for the Comparison posts; neither was statistically significant. It is of interest that the one statistically significant SMR was 3.3 for brain tumors in the Comparison group, based on 5 observed deaths. For cancer of the breast, the SMR was 4.0 for Moscow and 2.4 for the Comparison groups; neither of these was statistically significant. The small number of deaths observed for the specific sites makes interpretation of their significance difficult.

As mentioned earlier in this section, 13 deaths could not be included in the analysis because of the absence of necessary information. It is of interest to review the characteristics of these 13 deaths, the reasons for their exclusion and, the specific causes of death in the Moscow and the Comparison groups (Table 5.7). All of the excluded deaths, with the exception of one female in the Comparison group, were males. Six of these deaths occurred in the SD employees as compared to 7 in the NSD group. Seven of the

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Table 5.4 All cause standardized mortality ratios (SMR)[1], person years, observed number of deaths[2] and confidence limits (C.L.)[3] for combined State and Non-State Department male employees who were ever in Moscow by source of name

Source of Name	Moscow Males			Comparison Males		
	Person Years	Observed No. of Deaths	SMR (95% C.L.)	Person Years	Observed No. of Deaths	SMR (95% C.L.)
Total Group	14088	36	0.42 (0.3,0.6)	20530	102	0.55 (0.5,0.7)
Current Employee (State Department Computer List)	2917	1	0.1 (0.0,0.4)	3607	2	0.1 (0.0,0.4)
Retired Employee (Service Record Card)	3008	19	0.78 (0.5,1.2)	6337	52	0.69 (0.5,0.9)
Tracing Questionnaires	1228	2	0.23 (0.0,0.8)	2354	9	0.41 (0.2,0.8)
Other Lists from State Department	6935	14	0.36 (0.2,0.6)	8232	39	0.55 (0.4,0.8)

[1]SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study persons from their time of arrival at index study post (Moscow for the Moscow subjects and the first comparison post of service for the comparison subjects) to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]There were 2 male deaths from the Moscow group excluded from this table because date of arrival at the Moscow Embassy was unknown.

[3]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

Source: MTMON3

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Table 5.5 All cause standardized mortality ratios (SMR)[1], person years, number of deaths[2] and confidence limits (C.L.)[3] for combined State and Non-State Department female employees who were ever in Moscow by source of name

Source of Name	Moscow Females			Comparison Females		
	Person Years	Observed No. of Deaths	SMR (95% C.L.)	Person Years	Observed No. of Deaths	SMR (95% C.L.)
Total	4018	11	0.85 (0.4,1.5)	8977	30	0.79 (0.5,1.1)
Current Employee (State Department Computer List)	828	0	0.0 (- -)	1579	1	0.2 (0.0,1.1)
Retired Employee (Service Record Card)	1984	7	1.1 (0.4,2.3)	4544	22	1.1 (0.7,1.7)
Tracing Questionnaire	678	0	0.0 (- -)	1494	0	0.0 (- -)
Other Lists from State Department	528	4	2.4 (0.7,6.1)	1360	7	0.94 (0.4,1.9)

[1]SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study persons from their time of arrival at index study post (Moscow for the Moscow subjects and the first comparison post of service for the comparison subjects) to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]There were 2 male deaths from the Moscow group excluded from this table because date of arrival at the Moscow Embassy was unknown.

[3]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

Source: MTMON3

Table 5.6 Observed and expected number of deaths and standardized mortality ratios (SMR)[1] and confidence limits (C.L.)[2] by specified groups of causes[3] and post for male and female[4] State and Non-State Department employees combined

Cause of Death (ICDA Code, 7th Rev.)	Moscow			Comparison		
	No. of Deaths		SMR	No. of Deaths		SMR
	Observed	Expected	(95% C.L.)	Observed	Expected	(95% C.L.)
All causes (001-998)	49	105.3	0.47 (0.4,0.6)	132	223.7	0.59 (0.5,0.7)
All malignant neoplasms (140-205)	17	19.0	0.89 (0.5,1.4)	47	41.1	1.1 (0.8,1.5)
Arteriosclerotic heart disease including CHD (420)	16	32.6	0.49 (0.3,0.8)	28	73.2	0.38 (0.2,0.6)
Selected malignant neoplasms						
Digestive organs (150-159)	3	4.6	0.65 (0.1,1.9)	11	10.8	1.0 (0.5,1.8)
Brain tumors & other CNS (193)	0	0.9	0.0 -	5	1.5	3.3 (1.1,7.7)
Pancreas (157)	1	1.0	1.0 (0.0,5.6)	1	2.2	0.45 (0.0,2.5)
Lung, primary & secondary (162-163)	5	5.8	0.86 (0.3,2.0)	11	12.2	0.90 (0.4,1.6)
Leukemia (204)	2	0.8	2.5 (0.3,9.0)	3	1.7	1.8 (0.4,5.3)
Hodgkins disease (201)	0	0.5	0.0 -	0	0.7	0.0 -
Breast (170)	2	0.5	4.0 (0.5,14.4)	3	1.2	2.4 (0.5,7.0)
Uterus (174)	1	0.2	5.0 (0.1,27.9)	0	0.1	0.0 -
Cervix (171)	1	0.1	10.0 (0.3,55.7)	0	0.0	0.0 -
Respiratory diseases (470-527)	0	4.3	0.0 -	3	10.3	0.29 (0.1,0.8)
All accidents (800-936)	6	11.6	0.52 (0.2,1.1)	15	15.8	0.95 (0.5,1.6)
Suicides (963, 970-979)	0	3.9	0.0 -	5	5.8	0.85 (0.3,2.0)

[1]SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study persons from their time of arrival at first study post to time of follow-up to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2]Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

[3] groups of causes are as [illegible]ned by Monson (1) using the [illegible] 7th Revision.

[4]For this analysis the experience of males and females as well as the State and Non-State popula[illegible]ons have been combined

Table 5.7 Selected characteristics of deaths excluded from mortality analysis by post.

Characteristic	Number of Deaths		
	Total	Moscow	Comparison
Total deaths	194	56	138
Total deaths excluded	13 (7%)	7 (12%)	6 (4%)
State Department Employees	6	3	3
Non-State Department Employees	7	4	3
Sex: Males	12	7	5
Females	1	0	1
Reason excluded:			
Unknown year of arrival at post	8	6	2
Unknown birthdate	3	1	2
No tour within study period	2	0	2
Cause of death:			
Asthma	1	0	1
Lung cancer	1	1	0
Kidney cancer	1	1	0
Stroke	1	0	1
Heart disease	5	2	3
Digestive disease	1	1	0
Accidents	1	0	1
Unknown/unspecified	2	2	0

excluded deaths occurred in the Moscow group, representing 12% of the total deaths identified in this group. Of these seven deaths, 2 were from cancer (1 lung and 1 kidney), 2 from heart disease, 1 from digestive disease and for 2 deaths, the cause was unknown. Six of these deaths occurred in the Comparison group, representing 4% of the total deaths identified in this group. Three (50%) of the 6 deaths in the Comparison group were from heart disease, which was not unexpected. This percentage however, was somewhat higher than that noted in Table 5.6, where heart disease accounted for 21% of the deaths. In 6 out of the 7 excluded Moscow deaths the reason was unknown year of arrival at the post; one individual was excluded because of unknown birth date. In the Comparison group the reasons for exclusion were evenly divided between unknown year of arrival and unknown birth date except for one individual with no tour within the study period.

Finally, Tables 5.8 and 5.9 present a very detailed listing of all 194 deaths by cause, coded according to the ICDA (8th revision) separately for males and females (4). The Moscow male and female employees had proportionately fewer deaths overall. Most of the categories have extremely small numbers, but Moscow males consistently had relatively smaller numbers of deaths than Comparison males. For Moscow females (Table 5.9), 8 out of the 11 deaths were due to malignant neoplasms compared with 14 out of the 31 deaths among Comparison females. While the proportion of cancer deaths was higher in female employees, the Moscow mortality experience represented an excess of about 2 deaths over the Comparison experience. It is difficult to attach any significance to the relatively high proportion of cancer deaths in females because of the small numbers of deaths involved.

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Table 5.8 Observed numbers of deaths and observed to expected ratios[1] by individual causes of death for combined State and Non-State Department male employees

Cause of Death (ICDA 8th)	Observed No. Dying from Cause		Observed to Expected Ratios	
	Moscow	Comparison	Moscow	Comparison
Total Deaths	45	107	0.73	1.2
Malignant Neoplasms (Total)	11	33	0.63	1.3
Tongue (141)	0	1	0.0	1.7
Mouth (145)	0	1	0.0	1.7
Esophagus (150)	0	1	0.0	1.7
Large intestine (153)	2	4	0.82	1.1
Rectum (154)	0	1	0.0	1.7
Liver (155)	0	1	0.0	1.7
Pancreas (157)	1	1	1.2	0.84
Larynx (161)	0	1	0.0	1.7
Lung (162)	5	9	0.88	1.1
Melanoma of skin (172)	0	1	0.0	1.7
Prostate (185)	0	2	0.0	1.7
Urinary organ (189)	1	0	2.5	0.0
Brain (191)	0	3	0.0	1.7
Nervous system (192)	0	2	0.0	1.7
Unspecified site (199)	1	1	1.2	0.84
Lymposarcoma (200)	0	1	0.0	1.7
Multiple myeloma (203)	0	1	0.0	1.7
Leukemia (205-207)	1	2	0.82	1.1
Infective and parasitic diseases (000-136)	0	1	0.0	1.7
Benign neoplasms (210-238)	0	1	0.0	1.7
Metabolic diseases (270-279	0	1	0.0	1.7
Central nervous system (340-349)	0	1	0.0	1.7
Ischemic heart disease (410-414)	16	26	0.94	1.0
Other heart disease (420-429)	1	3	0.61	1.3

[1] Observed to Expected Ratios were computed by dividing the observed number of deaths due to a given cause by the expected number for that cause. Expected numbers were computed in this table by assigning the total number for a given cause to each group in proportion to the total person years of observation for that group (PY=14088 for Moscow males and PY=20530 for Comparison males). All deaths were included in this table whether or not complete follow-up information was available. This implicitly assumed that all individuals (living or dead) without complete

Table 5.8 - continued

Cause of Death (ICDA 8th)	Observed No. Dying from Cause		Observed to Expected Ratios	
	Moscow	Comparison	Moscow	Comparison
Cerebrovascular disease (430-438)	2	4	0.82	1.1
Arteries, arterioles, and capillaries (440-445)	2	1	1.6	0.56
Respiratory system (460-519)	0	4	0.0	1.7
Diseases of liver (571-573)	2	2	1.2	0.84
Ill defined and unknown cause (790-796)	4	13	0.58	1.3
Motor vehicle accidents (E812,E814,E819)	1	4	0.49	1.3
Suicide, homocide (E950-E969)	0	4	0.0	1.7
Other Accidents/Injuries	6	9	0.98	1.0

Table 5.9 Observed numbers of deaths and observed to expected ratios[1] by individual causes of death for combined State and Non-State Department female employees

Cause of Death (ICDA 8th)	Observed No. Dying from Cause		Observed to Expected Ratios	
	Moscow	Comparison	Moscow	Comparison
Total Deaths	11	31	0.85	1.1
Malignant Neoplasms (Total)	8	14	1.1	0.94
Esophagus (150)	0	1	0.0	1.4
Large intestine (153)	0	1	0.0	1.4
Lung (162)	1	2	1.1	0.96
Bone (170)	0	1	0.0	1.4
Melanoma of skin (172)	1	1	1.6	0.72
Breast (174)	2	3	1.3	0.87
Cervix (180)	1	0	3.2	0.0
Uterus (182)	1	0	3.2	0.0
Respiratory/digestive secondary(197)	0	1	0.0	1.4
Unspecified site	1	2	1.1	0.96
Lymphoid tissue (202)	0	1	0.0	1.4
Leukemia (205-207)	1	1	1.6	0.72
Benign neoplasms (210-238)	1	0	3.2	0.0
Central nervous system (340-349)	0	1	0.0	1.4
Ischemic heart disease (410-414)	1	3	0.81	1.1
Other heart disease (420-429)	0	3	0.0	1.4
Diseases of liver (571)	0	1	0.0	1.4
Ill defined and unknown cause(790-796)	1	2	1.1	0.96
Motor vehicle accidents (E812,E814,E819)	0	2	0.0	1.4
Suicide, Homicide (E950-E969)	0	2	0.0	1.4
Other accidents/injuries	0	3	0.0	1.4

[1] Observed to Expected Ratios were computed by dividing the observed number of deaths due to a given cause by the expected number for that cause. Expected numbers were computed in this table by assigning the total number for a given cause to each group in proportion to the total person years of observation for that group (PY=4018 for Moscow females and PY=8977 for Comparison females). All deaths were included in this table whether or not complete follow-up information was available. This implicitly assumed that all individuals (living or dead) without complete follow-up information had survival experience similar to those with complete follow-up. Since most individuals had completed follow-up, the effect of this assumption is of no consequence.

SOURCE: ICDADTD

SECTION 6 - MORBIDITY EXPERIENCE OF EMPLOYEES

Information on the morbidity experience of the employees is derived from two sources: the medical record and the Health History Questionnaire. A physical examination is required by the State Department upon: pre-employment, prior to or transfer from a foreign post, separation or retirement. New dependents acquired by marriage, birth, or adoption are also required to have examinations under the same circumstances as employees. Generally, these stipulations result in an employee having a physical examination approximately every two years during an employee's service with the State Department. Non-State Department employees (mostly military), tended to have examinations even more frequently. Since information in the medical records of State and Non-State employees was similar and since similar Standardized Medical Examination forms were used by nearly all agencies involved, these groups of employees were combined in analyzing the data derived from medical records.

The Health History Questionnaire, on the other hand, attempted to obtain information at a recent point in time directly from the individuals themselves on their health experience and problems and those of their dependents. For some, it provided the only available medical information when no medical record could be located and abstracted.

The comparative findings on morbidity experience will be presented using information derived from the medical abstracts, followed by data using information from the Health History Questionnaire for State and Non-State Department employees.

MEDICAL ABSTRACTS

Table 6.1 shows for all State and Non-State Department employees for whom a medical record abstract was obtained, the distribution by age

Table 6.1 Number[1] and percent with a Medical Abstract, for State and Non-State Department employees, person years observed and percent of person years observed by year, age at arrival at post, sex and post

Arrival at Post		Males								Females							
		Moscow				Comparison				Moscow				Comparison			
		Persons		Person		Persons		Person		Persons		Person		Persons		Person	
Year	Age	No.	%	Years	%	No.	%	Years	%	No.	%	Years	%	No.	%	Years	%
Total		879		10526	100%	1303		16496	100%	314		3146	100%	563		6949	100%
1953-60 Total		258	100%			480	100%			72	100%			200	100%		
	<35	151	58%	3089	29%	192	40%	3895	24%	48	67%	959	30%	101	50%	1940	28%
	35-44	83	32%	1702	16%	181	38%	3578	22%	20	28%	349	11%	75	38%	1402	20%
	45-54	23	9%	397	4%	85	18%	1593	10%	3	4%	58	2%	18	9%	351	5%
	55+	1	<1%	8	<1%	22	5%	357	2%	1	1%	17	1%	6	3%	125	2%
1961-66 Total		242	100%			305	100%			68	100%			134	100%		
	<35	137	57%	1844	18%	142	47%	1894	11%	29	43%	381	12%	57	43%	767	11%
	35-44	84	35%	1123	11%	99	32%	1361	8%	34	50%	460	15%	53	40%	715	10%
	45-54	21	9%	290	3%	55	18%	722	4%	5	7%	67	2%	20	15%	276	4%
	55+	0	0%	0	0%	9	3%	126	1%	0	0%	0	0%	4	3%	51	1%
1967-71 Total		172	100%			266	100%			69	100%			118	100%		
	<35	108	63%	893	8%	154	58%	1245	8%	27	39%	229	7%	50	42%	415	6%
	35-44	43	25%	353	3%	66	25%	535	3%	19	28%	155	5%	37	31%	309	4%
	45-54	20	12%	178	2%	43	16%	335	2%	17	25%	145	5%	25	21%	202	3%
	55+	1	1%	7	<1%	3	1%	23	<1%	6	9%	39	1%	6	5%	45	1%
1972+ Total		207	100%			252	100%			105	100%			111	100%		
	<35	86	42%	303	3%	129	51%	468	3%	35	33%	123	4%	42	38%	129	2%
	35-44	73	35%	218	2%	79	31%	246	1%	29	28%	68	2%	27	24%	87	1%
	45-54	33	16%	92	1%	29	12%	83	1%	33	31%	80	3%	24	22%	89	1%
	55+	15	7%	29	<1%	15	6%	35	<1%	8	8%	16	1%	18	16%	46	1%

[1] Excludes those with unknown year of arrival at post.

Source: MAMB5 and MAMH4

and time of arrival at post with the corresponding person years of observation during which diseases or conditions might have developed. Abstracts were obtained on 1,193 individuals (879 men and 314 women) who had served in Moscow and on 1,866 individuals (1,303 men and 563 women) who had served in one or more of the Comparison posts, but not in Moscow, during the study period. As expected, the time periods during which diseases or conditions could develop—from arrival at the study post to time when the individual was located—varied, depending on year of arrival; they ranged from 20 years for those in the earliest period (1953 to 1960) to only 2 to 3 years for those who had entered in the last period (1972 or later). In all cases, however, the individual's entire medical record was examined to determine, as far as possible, pre-existing conditions that were present before arrival at the index study post.

Table 6.1 also shows that, for both sexes and study groups, less than 10% of the person years of observation were contributed by individuals who first arrived at the study post in 1972 or later and nearly 53% of the person years by individuals who entered the study during the earliest period. For both sexes, the Comparison group had a slightly longer period of follow-up of 1 to 2 years. It is also apparent that the Moscow males were somewhat younger upon arrival at the post than their Comparison counterparts in every time period. The females in the Moscow group were younger upon arrival than the Comparison women only in the first time period and the two groups were about equal in age at arrival during the other time periods. These differences in age of arrival emphasize the need to adjust the morbidity figures derived from the Medical Abstract data using the log linear modal described in Section 2, since the Moscow group, in general, would be expected to have fewer events.

As an approximate indication of the general health of each group (Moscow and Comparison), the number of examinations performed for a medical problem (i.e. other than a routine examination) was reviewed. Table 6.2 shows that there was no difference between the Moscow and Comparison groups in this regard, considering all examinations ever conducted for a problem or just those done after the first tour at the index study post.

Since one of the potential problems associated with microwave radiation as reported in animal experiments with high doses of radiation is infertility, this was examined by comparing the distribution of the number of children reported on the Medical Abstract of the employees in the Moscow and Comparison groups (Table 6.3). The data were not corrected for marital status, length of marriage, contraceptive practices, under-reporting of births; nor were they separated into groups of children born before or after the index study tour. However, for both Moscow and Comparison employees, 46% reported no children on their most recent medical examination. The distribution of the number of children was quite similar for each group with an average number of 1.3 children per family in both study groups. The percentage of reported dead children in each of the study groups was also similar.

Each time an individual was examined, the following types of summary health information were recorded: whether his present health was other than good, whether he had been hospitalized since the last examination, whether he had a significant medical problem, and whether there had been medical problems in the interval since the last examination. The results of the answers to these summary health characteristics are shown in Tables 6.4 and

MB1

Table 6.2 Total number of medical examinations for a problem or special evaluation and number of examinations after first tour at index post for State Department and Non-State Department employees by sex and post

Sex	Number of Medical Examinations for a Problem	Number of Examinations for Problem Ever Mentioned				Number of Examinations for Problem After First Tour at Index Post			
		Moscow		Comparison		Moscow		Comparison	
		No.	%	No.	%	No.	%	No.	%
Males	0	846	95%	1227	93%	866	97%	1280	97%
	1	34	4%	76	6%	21	2%	37	3%
	2	8	1%	17	1%	3	<1%	7	1%
	3 or more	2	<1%	4	<1%				
Females	0	300	95%	541	96%	309	98%	557	98%
	1	12	4%	21	4%	4	1%	9	2%
	2	1	<1%	3	1%	1	<1%	0	0%
	3 or more	2	1%	1	<1%	1	<1%	0	0%

Source: MAMB4

Table 6.3 Number of children and number of dead children reported from Medical Abstracts for Moscow and Comparison employees

Number of Children Reported on Medical Abstract	Moscow		Comparison	
	No.	%	No.	%
Total Employees	1205	100%	1890	100%
0	549	46%	875	46%
1	130	11%	223	12%
2	265	22%	376	20%
3	141	12%	251	13%
4 or more	101	8%	134	7%
Unknown	19	2%	31	2%
Number of Dead Children	1205	100%	1890	100%
0	1188	99%	1867	99%
1	16	1%	20	1%
2 or more	1	<1%	3	<1%

Source: MAMB4

MB3M

Table 6.4 Number and rate of occurrence per 1000 person years (PY) for selected summary health characteristics from Medical Abstracts according to whether ever reported present or whether present after first tour at index post and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees

Summary Health Characteristics	Characteristic Ever Present				Characteristic Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Mos-cow	Compar-ison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Present health reported other than good	144	16%	257	20%	94	8.9	176	10.7	0.92	1.0	N.S.
Hospitalization or medical evacuation reported	150	17%	205	16%	117	11.1	160	9.7	1.1	0.97	N.S.
Significant medical problem reported	152	17%	220	17%	130	12.4	183	11.1	1.0	1.0	N.S.
Positive interval history reported	554	63%	777	60%	230	21.8	337	20.4	1.0	1.0	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry

[2]N.S. = Not Significant, P-value greater than .05

Source: MAMBS

6.5 for male and female employees, respectively. These summary characteristics are also presented according to whether they were ever present for an employee and whether they were present after the index study tour. The Standardized Morbidity Ratios computed for those present after the index tour show that the rate of occurrence of all four of these summary characteristics are virtually identical in the Moscow and Comparison groups after arrival at the index study post.

A variety of specific data regarding physical characteristics and laboratory data was available on those for whom there was a medical abstract, only some of which was analyzed.

Diastolic Blood Pressure (Table 6.6)

The diastolic blood pressure for males was higher than 85 in 11% of the Moscow group as compared to 10% of the Comparison group prior to their arrival at the index post. The frequencies remained similar in both study groups but the percentage of those over 85 increased to 21% for Moscow and to 20% for the Comparison group as of the last medical examination after the index tour. The increased percentage in both groups of men probably reflected the increase in age.

The percentage of diastolic blood pressures for Moscow females that was higher than 85 before the index tour was 10% versus only 5% of the Comparison women. The percent for the Moscow females after the index tour remained 11 and the Comparison percent increased to 13. However, the smaller increase in the Moscow group is due in part to a higher percentage of unknown pressures (17% versus 11% in Comparison females). The percentage of unknown blood pressures exceeded 10%, but was similar in the Moscow and Comparison groups.

MB3F

Table 6.5 - Number and rate of occurrence per 1000 person years (PY) for selected summary health characteristics from Medical Abstracts according to whether ever reported present or whether present after first tour at index post and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees

Summary Health Characteristics	Ever Present				Present After Index Study Tour				SMBR		P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison				
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Present health reported other than good	64	20%	122	22%	39	12.4	86	12.4	1.0	1.0	N.S.
Hospitalization or medical evacuation reported	114	36%	173	31%	83	26.4	138	19.9	1.1	0.95	N.S.
Significant medical problem reported	70	22%	123	22%	55	17.5	96	13.8	1.1	0.96	N.S.
Positive interval history reported	204	65%	353	63%	97	30.8	175	25.2	1.1	0.96	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate for year of entry and age at entry;

[2]N.S. = Not Significant, P-value greater than .05

Source: MAMB5

Table 6.6 Distribution of diastolic blood pressure (sitting) as reported on the Medical Abstract before index tour and after index tour for Moscow and Comparison employees by sex

Diastolic Blood Pressure (mm Hg)	Before Tour (First Examination)				After Tour (Last Examination)			
	Moscow		Comparison		Moscow		Comparison	
	No.	%	No.	%	No.	%	No.	%
Total males	890	100%	1324	100%	890	100%	1324	100%
Under 75	383	43%	501	38%	284	32%	405	31%
75-84	304	34%	522	39%	306	34%	482	36%
85-94	87	10%	119	9%	146	16%	203	15%
95 and over	5	1%	16	1%	46	5%	64	5%
Unknown	111	12%	166	13%	108	12%	170	13%
Total females	315	100%	566	100%	315	100%	566	100%
Under 75	148	47%	264	47%	122	39%	243	43%
75-84	95	30%	188	33%	105	33%	182	32%
85-94	30	10%	24	4%	32	10%	58	10%
95 and over	1	<1%	3	1%	3	1%	19	3%
Unknown	41	13%	87	15%	53	17%	64	11%

Source: MAMB4

Sitting Pulse Rate (Table 6.7)

Sitting pulse rates at first and last examinations were compared. There were essentially no differences between the Moscow and Comparison groups at either examination for males or females. Also, the distribution of pulse rates remained relatively the same between the first and last examinations. In all groups, the percentages of unknown values were similar.

Visual Acuity and Hearing (Table 6.8)

Data on decrease in visual acuity and on hearing impairment are shown in Table 6.8. There was no difference in the frequency of decreased visual acuity in the Moscow and Comparison employees for both males and females. Among Moscow males, 2% had some hearing impairment or degree of deafness as compared to only 1% among males in the Comparison posts. Nearly one-third (6 individuals) of these were detected after the index tour in Moscow whereas no hearing loss was reported in the Comparison group after their index tour. All 6 were in the group for whom exposure to microwaves while at the Moscow embassy was uncertain. The females also showed no difference between the groups in decreased visual acuity. The numbers of females with hearing impairment were too few to be analyzed. Only two females had any hearing impairment, both of whom were in the Comparison group; their impairment first appeared after the index tour.

Electrocardiogram (Table 6.9)

The results of the most recent electrocardiogram after the index tour were found to be abnormal in approximately 9% of the study group. No differences were observed between the Moscow and Comparison groups in either male or females.

White Blood Cell Count (Table 6.10)

White blood cell counts (WBC) after the index tour were available on approximately 63% of the males in both groups and on 88% of Moscow and 79%

Table 6.7 Distribution of pulse rate (sitting) as reported on the Medical Abstracts before index tour and after index tour for Moscow and Comparison employees by sex

Pulse Rate (beats per minute)	Before Tour (First Examination)				After Tour (Last Examination)			
	Moscow		Comparison		Moscow		Comparison	
	No.	%	No.	%	No.	%	No.	%
Total males	890	100%	1324	100%	890	100%	1324	100%
Under 75	278	31%	391	30%	300	34%	452	34%
75-84	357	40%	524	40%	297	33%	422	32%
85-94	84	9%	144	11%	110	12%	162	12%
95 and over	41	5%	68	5%	57	6%	79	6%
Unknown	130	15%	197	15%	126	14%	209	16%
Total females	315	100%	566	100%	315	100%	566	100%
Under 75	62	20%	123	22%	97	31%	164	29%
75-84	120	38%	220	39%	95	30%	193	34%
85-94	53	17%	67	12%	47	15%	81	14%
95 and over	26	8%	45	8%	25	8%	53	9%
Unknown	54	17%	111	20%	51	16%	75	13%

Source: MAMB4

HB6

Table 6.8 Number and percent of decrease in visual acuity and hearing impairment reported as being ever present in the Medical Abstracts and rate of occurrence per 1000 person years (PY) after first tour at index post and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison employees by sex

Sex / Characteristic	Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Total males	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Decrease in visual acuity	262	30%	383	29%	101	9.6	157	9.5	1.0	1.0	N.S.
Hearing impairment	21	2%	11	1%	6	0.6	0	0	2.7	und.	--
Total females	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Decrease in visual acuity	109	35%	198	35%	32	10.2	83	11.9	0.87	1.1	N.S.
Hearing impairment	0	0%	2	<1%	0	0	2	0.3	und.	1.6	--

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMBS

Table 6.9 Results of electrocardiogram (ECG) reported on the Medical Abstracts of the last examination after index tour for Moscow and Comparison employees by sex

Sex	ECG Results	Moscow		Comparison	
		No.	%	No.	%
Total males		890	100%	1324	100%
	Normal or not done	821	92%	1200	91%
	Abnormal	69	8%	124	9%
Total females		315	100%	566	100%
	Normal or not done	286	91%	506	89%
	Abnormal	29	9%	60	11%

Source: MAMB4

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Table 6.10 Distribution of study subjects according to White Blood Cell Count (WBC) reported on Medical Abstracts of last examination after index tour for Moscow and Comparison employees by sex

Sex	WBC	Moscow		Comparison	
		No.	%	No.	%
Total males		890	100%	1324	100%
	Less than 5000	64	7%	107	8%
	5000-8999	432	49%	592	45%
	9000-10,999	51	6%	94	7%
	11,000 and over	15	2%	25	2%
	Unknown	328	37%	506	38%
Total females		315	100%	566	100%
	Less than 5000	40	13%	66	12%
	5000-8999	200	63%	312	55%
	9000-10,999	30	10%	47	8%
	11,000 and over	8	3%	20	4%
	Unknown	37	12%	121	21%

Source: MAMB4

of Comparison females after the index tour. There were essentially no differences between Moscow and Comparison groups for either sex.

Psychiatric Evaluations (Table 6.11)

Some of the medical examinations performed were psychiatric evaluations which were done either routinely or because there was some type of psychiatric problem requiring evaluation. Overall, 14% of Moscow employees had at least one psychiatric evaluation, the same percentage as the Comparison employees. In both Moscow and Comparison employees, 5% had one or more psychiatric evaluations because of a problem which occurred after the first tour at the index post.

General Medical History (Tables 6.12 and 6.13)

At the time of each medical examination, employees were asked a standard series of questions about their general health status and especially about their ability to perform on the job. The results of the answers to these questions for males are shown in Table 6.12 and for females in Table 6.13. The Moscow and Comparison employee groups are notable mainly for their similarity; no statistically significant differences were present. Generally, most of the conditions mentioned rarely occurred. In the three categories with the largest SMBRs for Moscow, the conditions were rare; sensitivity to chemicals was reported by one individual in the Moscow and none in the Comparison groups, positional disabilities were reported by one person in each group and radiation exposure was reported in 12 (1.1/1000 person years) in the Moscow as compared to 7 (0.4/1000 person years) in the Comparison group (this may have included some reports of microwave exposure while in Moscow).

The Moscow and Comparison female employees were also similar with respect to the items in the general medical history. The largest differences

MB9

Table 6.11 Distribution of number of all psychiatric examinations and psychiatric examinations for a problem after index tour reported on Medical Abstracts for Moscow and Comparison employees

Number of Psychiatric Examinations	Moscow		Comparison	
	No.	%	No.	%
Total group	1205	100%	1890	100%
All Examinations				
None	1040	86%	1636	86%
One	99	8%	134	7%
Two	33	3%	51	3%
Three or more	33	3%	69	4%
Examinations for a Problem After First Tour at Index Post				
None	1145	95%	1788	95%
One	34	3%	40	2%
Two	12	1%	17	1%
Three or more	14	1%	45	2%

Source: MAMB4

Table 6.12 Number and percent of general medical conditions ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and Standardized Morbidity Ratios (SMBR)[1] for Moscow and Comparison male employees

General Medical History	Conditions Ever Present				Condition First Present After Index Study Tour				SMBR		P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison				
	No.	%	No.	%	No.	Rate per 1 000 PY	No.	Rate per 1 000 PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Self-treated condition	60	7%	98	8%	31	2.9	52	3.2	0.95	1.0	N.S.
Illness or injury	382	43%	577	44%	90	8.6	140	8.5	1.0	1.0	N.S.
Consulted physician, etc.	568	65%	844	65%	162	15.4	225	13.6	1.1	0.96	N.S.
Operation	542	62%	834	64%	124	11.8	197	11.9	1.0	1.0	N.S.
Psychiatric help	10	1%	17	1%	7	0.7	13	0.8	0.87	1.1	N.S.
Denied life insurance	7	1%	25	2%	5	0.5	14	0.8	0.81	1.1	N.S.
Rejected from military	41	5%	87	7%	12	1.1	13	0.8	1.3	0.81	N.S.
Medical discharge (military)	38	4%	63	5%	9	0.9	13	0.8	1.0	0.97	N.S.
Disability compensation	42	5%	60	5%	12	1.1	18	1.1	1.1	0.95	N.S.
Sensitivity to chemicals	6	1%	0	0%	1	0.1	0	0	2.3	und.	--
Physical disability	4	<1%	3	<1%	2	0.2	2	0.1	1.1	0.90	--
Positional disability	4	<1%	4	<1%	1	0.1	1	0.1	1.9	0.67	--
Medical disability	5	1%	13	1%	3	0.3	4	0.2	1.2	0.89	--
Radiation exposure	33	4%	27	2%	12	1.1	7	0.4	1.5	0.64	N.S.
Educational problems	12	1%	10	1%	0	0	1	0.1	und.	1.5	--

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: NAMRU5

MB10F

Table 6.13 Number and percent of general medical conditions ever present and rate of occurrence per 1000 person years (PY) first time present after first tour at index post reported on Medical Abstracts and Standardized Morbidity Ratios (SMBR)[1] for Moscow and Comparison female employees

General Medical History	Conditions Ever Present				Condition First Present After Index Study Tour				SMBR		P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison				
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Self-treated condition	21	7%	40	7%	13	4.1	23	3.3	1.1	0.96	N.S.
Illness or injury	106	34%	228	40%	21	6.7	67	9.6	0.77	1.1	N.S.
Consulted physician, etc.	243	77%	418	74%	61	19.4	120	17.3	1.0	1.0	N.S.
Operation	209	67%	377	67%	48	15.3	98	14.1	1.0	0.98	N.S.
Psychiatric help	3	1%	10	2%	2	0.6	7	1.0	0.68	1.2	--
Denied life insurance	2	1%	4	1%	1	0.3	3	0.4	0.77	1.1	--
Disability compensation	2	1%	10	2%	2	0.6	6	0.9	0.98	1.0	--
Sensitivity to chemicals	2	1%	1	<1%	0	0	1	0.1	und.	1.2	--
Physical disability	1	<1%	0	0%	1	0.3	0	0	3.0	und.	--
Positional disability	1	<1%	0	0%	1	0.3	0	0.0	2.6	und.	--
Medical disability	1	<1%	4	1%	1	0.3	3	0.4	0.99	1.0	--
Radiation exposure	2	1%	3	1%	0	0	0	0	und.	und.	--
Educational problems	5	2%	5	1%	2	0.6	2	0.3	1.5	0.75	--
Pregnancy	72	23%	85	15%	22	7.0	40	5.8	1.2	0.92	N.S.
Pregnancy conditions	3	1%	9	2%	1	0.3	4	0.6	0.55	1.3	--
Vaginal discharge	108	34%	183	32%	37	11.8	64	9.2	1.2	0.91	N.S.
Menstrual problems	152	48%	269	48%	49	15.6	93	13.4	1.1	0.94	N.S.
Female problems	107	34%	188	33%	49	15.6	81	11.7	1.2	0.91	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events).

between the Moscow and Comparison groups were found with regard to physical disabilities, positional disabilities and educational problems, which occurred more frequently in the Moscow group. Generally these conditions were infrequent, with only one or two persons exhibiting the characteristic and therefore no inferences can be derived from the differences, which were not statistically significant.

History of Specific Diseases or Medical Conditions (Tables 6.14 and 6.15)

A disease history involving some 70 diseases or medical conditions was abstracted from the medical records of all employees. The results for males are shown in Table 6.14 and for females in Table 6.15. These tables classify people as to whether the disease or condition was ever present or whether it was present after the first tour at the index post. The data presented in these tables must be interpreted cautiously because of the method by which it was derived from the medical records. This portion of the record was a checklist of the 70 diseases and conditions with no indication on the medical form as to when the conditions first occurred. The date of the earliest examination on which the disease or condition was first mentioned was abstracted. All diseases or conditions which were first mentioned on examinations occurring after the date of the index tour were counted as incident cases. It should be pointed out, however, that this must be regarded as only an approximation of the incidence of the condition, since the question may not have been asked on earlier exams, and therefore the number could include conditions that were present before the index tour. The problem becomes apparent in review of Tables 6.14 and 6.15. Far too few individuals had reported histories of common childhood diseases ever present, undoubtedly because the examining physician never did ask the question or did not record the answer; correspondingly, the "incidence" of childhood diseases reported

Table 6.14 Number and percent of diseases or conditions ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Amnesia	6	1%	5	<1%	3	0.3	1	0.1	2.1	0.40	--
Appendicitis	130	15%	216	17%	12	1.1	38	2.3	0.62	1.2	0.03
Arthritis/rheumatism	85	10%	159	12%	58	5.5	113	6.8	0.91	1.1	N.S.
Artificial eye	0	0%	3	<1%	0	0	1	0.1	und.	1.5	--
Asthma	65	7%	84	6%	23	2.2	46	2.8	0.83	1.1	N.S.
Attempted suicide	1	<1%	3	<1%	0	0	1	0.1	und.	1.4	--
Back pain	84	10%	125	10%	67	6.4	98	5.9	1.0	1.0	N.S.
Back support brace	33	4%	55	4%	18	1.7	22	1.3	1.2	0.88	N.S.
Bleeding after tooth extraction	8	1%	17	1%	3	0.3	8	0.5	0.64	1.3	N.S.
Bloody stools	44	5%	54	4%	33	3.1	41	2.5	1.1	0.94	N.S.
Boils	166	19%	285	22%	51	4.8	92	5.6	0.98	1.0	N.S.
Bone	59	7%	81	6%	30	2.8	42	2.5	1.1	0.94	N.S.
Chest pain	140	16%	221	17%	80	7.6	136	8.2	0.96	1.0	N.S.
Chronic colds	62	7%	84	6%	22	2.1	37	2.2	1.0	0.99	N.S.
Chronic cough, blood	66	8%	108	8%	34	3.2	62	3.8	0.98	1.0	N.S.
Depression	30	3%	56	4%	20	1.9	37	2.2	0.92	1.1	N.S.

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and at age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMB5

Table 6.14 Continued

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Diabetes	7	1%	9	1%	6	0.6	8	0.5	1.0	0.98	N.S.
Dental problem	102	12%	153	12%	60	5.7	92	5.6	1.1	0.97	N.S.
Diptheria	48	5%	79	6%	12	1.1	29	1.8	0.93	1.0	N.S.
Dizziness	37	4%	75	6%	16	1.5	41	2.5	0.77	1.1	N.S.
Drug addiction	0	0%	3	<1%	0	0	3	0.2	und.	1.5	--
Drug reaction	151	17%	181	14%	59	5.6	77	4.7	1.1	0.92	N.S.
Ear, nose, throat	286	33%	442	34%	113	10.7	182	11.0	1.0	1.0	N.S.
Epilepsy	2	<1%	5	<1%	1	0.1	2	0.1	0.82	1.1	--
Eye trouble	319	36%	478	37%	128	12.2	187	11.3	1.0	0.98	N.S.
Foot trouble	91	10%	134	10%	39	3.7	56	3.4	1.1	0.97	N.S.
Headaches	74	8%	131	10%	40	3.8	68	4.1	0.94	1.0	N.S.
Gall bladder/stone	22	3%	45	3%	13	1.2	28	1.7	0.82	1.1	N.S.
Gastrointestinal problem	202	23%	302	23%	91	8.6	147	8.9	1.0	1.0	N.S.
Glasses	552	63%	875	67%	121	11.5	185	11.2	1.1	0.94	N.S.
Goiter	5	1%	12	1%	2	0.2	7	0.4	0.67	1.2	--
Hallucinogenic drugs/marijuana	5	1%	3	<1%	2	0.2	1	0.1	1.6	0.57	--
Hay fever/allergies	110	13%	206	16%	33	3.1	58	3.5	0.9	1.1	N.S.
Hearing aid	16	2%	15	1%	12	1.1	10	0.6	1.5	0.72	N.S.
High/low blood pressure	108	12%	178	14%	52	4.9	88	5.3	1.1	0.97	N.S.

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMBS

Table 6.14 (Continued)

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Indigestion	99	11%	163	13%	59	5.6	92	5.6	1.0	1.0	N.S.
Insomnia	53	6%	84	6%	30	2.8	56	3.4	0.92	1.1	N.S.
Jaundice/hepatitis	96	11%	165	13%	32	3.0	54	3.3	1.0	0.99	N.S.
Kidney stones, blood in urine	64	7%	110	8%	39	3.7	63	3.8	1.0	0.99	N.S.
Lameness	21	2%	43	3%	14	1.3	20	1.2	1.1	0.93	N.S.
Leg cramps	109	12%	164	13%	41	3.9	91	5.5	0.86	1.1	N.S.
Loss of limb	7	1%	12	1%	1	0.1	6	0.4	0.36	1.4	--
Malaria, dysentery	58	7%	76	6%	39	3.7	53	3.2	1.1	0.95	N.S.
Motion sickness	172	20%	300	23%	36	3.4	64	3.9	0.96	1.0	N.S.
Mumps	597	68%	878	67%	83	7.9	118	7.2	1.1	0.95	N.S.
Nervous problems	41	5%	91	7%	19	1.8	39	2.4	0.82	1.1	N.S.
Neuritis	17	2%	21	2%	8	0.8	14	0.8	1.1	0.96	N.S.
Nightmares	7	1%	9	1%	3	0.3	4	0.2	1.2	0.88	--
Palpitations	79	9%	128	10%	46	4.4	80	4.8	0.95	1.0	N.S.
Paralysis	9	1%	27	2%	3	0.3	8	0.5	0.72	1.2	N.S.

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMB5

Table 6.14 (Continued)

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour				SMBR		P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison				
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Piles	231	26%	371	28%	107	10.2	175	10.6	0.97	1.0	N.S.
Rheumatic fever	10	1%	35	3%	4	0.4	12	0.7	0.66	1.2	N.S.
Running ears	38	4%	72	6%	10	1.0	23	1.4	0.81	1.1	N.S.
Rupture	87	10%	143	11%	40	3.8	65	3.9	1.0	0.97	N.S.
Scarlet fever	119	14%	182	14%	24	2.3	33	2.0	1.2	0.89	N.S.
Sinusitis	164	19%	287	22%	52	4.9	111	6.7	0.82	1.1	N.S.
Skin disease	102	12%	120	9%	70	6.6	88	5.3	1.1	0.94	N.S.
Sleep walking	14	2%	25	2%	1	0.1	12	0.7	0.20	1.5	0.01
Stutters	20	2%	32	2%	7	0.7	9	0.5	1.0	0.97	N.S.
Sugar in urine	44	5%	82	6%	23	2.2	39	2.4	1.0	0.99	N.S.
Sweats	23	3%	34	3%	8	0.8	23	1.4	0.80	1.1	N.S.
Swollen feet	15	2%	22	2%	13	1.2	18	1.1	1.0	0.98	N.S.
Swollen joints	75	9%	99	8%	39	3.7	57	3.5	1.1	0.95	N.S.
Tuberculosis	40	5%	77	6%	16	1.5	35	2.1	0.86	1.1	N.S.
Tumor/cancer	205	23%	281	22%	100	9.5	130	7.9	1.1	0.92	N.S.
Urination problems	62	7%	79	6%	35	3.3	46	2.8	1.1	0.93	N.S.
Venereal disease	57	6%	46	4%	24	2.3	15	0.9	1.4	0.67	0.02
Weight change	165	19%	246	19%	74	7.0	128	7.8	0.92	1.0	N.S.
Whooping cough	417	47%	632	49%	66	6.3	90	5.5	1.1	0.91	N.S.
Other	217	25%	354	27%	56	5.3	70	4.2	1.1	0.94	N.S.

[2] N.S. = Not Significant, P-value greater than .05

Table 6.15 Number and percent of history of diseases ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Amnesia	1	<1%	3	1%	0	0	1	0.1	und.	1.1	--
Appendicitis	60	19%	116	21%	11	3.5	23	3.3	1.2	0.93	N.S.
Arthritis/rheumatism	59	19%	99	18%	38	12.1	74	10.6	1.1	0.95	N.S.
Artificial eye	0	0%	1	<1%	0	0	1	0.1	und.	1.1	--
Asthma	24	8%	42	7%	8	2.5	21	3.0	0.84	1.1	N.S.
Attempted suicide	0	0%	2	<1%	0	0	0	0	und.	und.	--
Back pain	25	8%	43	8%	18	5.7	37	5.3	1.0	0.99	N.S.
Back support brace	13	4%	12	2%	5	1.6	4	0.6	1.7	0.66	--
Bleeding after tooth extraction	6	2%	12	2%	1	0.3	6	0.9	0.48	1.2	--
Bloody stools	8	3%	19	3%	5	1.6	16	2.3	0.68	1.2	N.S.
Boils	41	13%	73	13%	11	3.5	21	3.0	1.2	0.91	N.S.
Bone	24	8%	37	7%	14	4.4	20	2.9	1.3	0.85	N.S.
Chest pain	45	14%	56	10%	23	7.3	36	5.2	1.2	0.90	N.S.
Chronic colds	21	7%	50	9%	9	2.9	21	3.0	0.99	1.0	N.S.
Chronic cough, blood	31	10%	47	8%	10	3.2	28	4.0	0.85	1.1	N.S.
Depression	20	6%	41	7%	8	2.5	27	3.9	0.70	1.1	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMR5

Table 6.15 (Continued)

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Diabetes	0	0%	6	1%	0	0	6	0.9	und.	1.5	--
Dental problem	38	12%	103	18%	20	6.4	62	8.9	0.78	1.1	N.S.
Diptheria	13	4%	28	5%	1	0.3	6	0.9	0.55	1.2	--
Dizziness	31	10%	52	9%	11	3.5	20	2.9	1.2	0.90	N.S.
Drug addiction	1	<1%	1	<1%	1	0.3	0	0	3.0	und.	--
Drug reaction	70	22%	121	21%	26	8.3	53	7.6	1.0	0.98	N.S.
Ear, nose & throat	106	34%	204	36%	37	11.8	91	13.1	0.94	1.0	N.S.
Epilepsy	2	1%	2	<1%	2	0.6	2	0.3	1.4	0.76	--
Eye	110	35%	212	38%	42	13.4	99	14.2	0.89	1.0	N.S.
Foot	39	12%	63	11%	13	4.1	27	3.9	1.2	0.94	N.S.
Headaches	56	18%	94	17%	19	6.0	41	5.9	1.0	1.0	N.S.
Gall bladder/stone	17	5%	21	4%	10	3.2	15	2.2	1.3	0.88	N.S.
Gastrointestinal problems	65	21%	112	20%	26	8.3	59	8.5	0.95	1.0	N.S.
Glasses	220	70%	402	71%	34	10.8	79	11.4	1.1	0.98	N.S.
Goiter	8	3%	23	4%	2	0.6	10	1.4	0.75	1.1	N.S.
Hallucinogenic drugs/marijuana	1	<1%	2	<1%	0	0	1	0.1	und.	1.6	--
Hay fever/allergies	51	16%	83	15%	13	4.1	21	3.0	1.1	0.94	N.S.
Hearing aid	3	1%	1	<1%	2	0.6	0	0	3.0	und.	--
High/low blood pressure	56	18%	135	24%	18	5.7	57	8.2	0.79	1.1	N.S.

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Table 6.15 (Continued)

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Indigestion	32	10%	70	12%	18	5.7	51	7.3	0.78	1.1	N.S.
Insomnia	31	10%	53	9%	19	6.0	33	4.7	1.2	0.90	N.S.
Jaundice/hepatitis	22	7%	51	9%	3	1.0	16	2.3	0.49	1.2	N.S.
Kidney stones,blood in urine	14	4%	35	6%	10	3.2	18	2.6	1.0	0.98	N.S.
Lameness	3	1%	5	1%	2	0.6	2	0.3	2.4	0.63	--
Leg cramps	47	15%	92	16%	17	5.4	45	6.5	0.96	1.0	N.S.
Loss of limb	1	1%	3	1%	0	0	0	0	und.	und.	--
Malaria, dysentery	18	6%	52	9%	12	3.8	36	5.2	0.75	1.1	N.S.
Motion sickness	102	32%	165	29%	15	4.8	44	6.3	0.82	1.1	N.S.
Mumps	185	59%	318	56%	20	6.4	47	6.8	1.0	1.0	N.S.
Nervous problem	23	7%	46	8%	7	2.2	27	3.9	0.70	1.1	N.S.
Neuritis	11	4%	17	3%	2	0.6	8	1.2	0.77	1.1	--
Nightmares	2	1%	7	1%	0	0	1	0.1	und.	1.5	--
Palpitations	30	10%	76	13%	15	4.8	47	6.8	0.78	1.1	N.S.
Paralysis	4	1%	7	1%	0	0	3	0.4	und.	1.3	--

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMRS

Table 6.15 (Continued)

History of Disease or Condition	Disease or Condition Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Piles	72	23%	93	17%	29	9.2	51	7.3	1.1	0.93	N.S.
Rheumatic fever	8	3%	9	2%	3	1.0	5	0.7	1.4	0.86	--
Running ears	25	8%	20	4%	5	1.6	5	0.7	1.7	0.70	--
Rupture	9	3%	14	2%	6	1.9	9	1.3	1.3	0.86	N.S.
Scarlet fever	43	14%	80	14%	5	1.6	16	2.3	0.81	1.1	N.S.
Sinusitis	61	19%	136	24%	15	4.8	46	6.6	0.84	1.1	N.S.
Skin disease	32	10%	51	9%	18	5.7	45	6.5	0.79	1.1	N.S.
Sleep walking	9	3%	14	2%	4	1.3	6	0.9	1.4	0.84	--
Stutters	3	1%	4	1%	1	0.3	0	0	2.8	und.	--
Sugar in urine	10	3%	28	5%	3	1.0	15	2.2	0.48	1.3	N.S.
Sweats	12	4%	20	4%	8	2.5	12	1.7	1.7	0.79	N.S.
Swollen feet	35	11%	66	12%	20	6.4	49	7.1	0.86	1.1	N.S.
Swollen painful joint	35	11%	52	9%	14	4.4	31	4.5	1.1	0.95	N.S.
Tuberculosis	18	6%	31	6%	3	1.0	11	1.6	0.68	1.1	N.S.
Tumor/cancer	123	39%	217	39%	52	16.5	106	15.3	1.0	0.99	N.S.
Urination problems	31	10%	62	11%	14	4.4	37	5.3	0.86	1.1	N.S.
Venereal Disease	0	0%	1	<1%	0	0	1	0.1	und.	1.5	--
Weight change	70	22%	137	24%	31	9.9	76	10.9	0.90	1.0	N.S.
Whooping cough	149	47%	290	52%	19	6.0	45	6.5	0.99	1.0	N.S.
Other	44	14%	112	20%	7	2.2	20	2.9	0.77	1.1	N.S.

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMB5

after the index tour is probably mistakenly high because the question simply was not asked or not recorded until an examination after the index tour. This problem of identifying the condition in time is still present to a lesser, but still unknown degree, for other diseases and conditions. However, it was decided to analyze these data in spite of these difficulties, because these problems would tend to be present in both groups (Moscow and Comparison) to the same degree and because truly incident diseases and conditions would appear in the numerator and any large difference in incidence would still be reflected by the rates.

For males, the only diseases or conditions which were statistically different between the Moscow and Comparison groups were sleep walking (Comparison individuals reported sleep walking more frequently); venereal disease, which was present more frequently in Moscow; and appendicitis, which was more frequent in the Comparison group. For females there were no diseases or conditions with statistically significant differences. The SMBRs were very similar among the Moscow and Comparison groups for both males and females. The SMBR was slightly higher for the Moscow group in 34 out of 70 diseases or conditions for males and for 28 out of approximately 70 diseases or conditions for females. In females the largest differences noted were lameness (2 cases in Moscow, 2 in Comparison), stuttering (1 case in Moscow, 0 in Comparison), drug addiction (1 in Moscow, 0 in Comparison), and the use of a hearing aid (2 in Moscow, 0 in Comparison). In summary, the most impressive feature of the comparison of the histories of diseases found in the medical records was the very close similarity between the study groups both in terms of the lifetime history and in the reporting of the diseases and conditions after arrival at the index post.

Clinical Evaluation (Tables 6.16 and 6.17)

Tables 6.16 and 6.17 present the results of the clinical evaluations

Table 6.16 Number and percent of abnormal evaluations ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees by organ system

Organ Systems Which Were Clinically Evaluated	Abnormal Clinical Evaluation										P-value[2] for statistically significant differences
	Ever Present				First Present After Index Study Tour						
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=879)		(N=1303)		(PY=10526)		(PY=16496)				
Neck and head	73	8%	111	9%	2	0.2	6	0.4	0.59	1.3	--
Nose	111	13%	224	17%	37	3.5	83	5.0	0.80	1.1	N.S.
Mouth	166	19%	263	20%	57	5.4	115	7.0	0.87	1.1	N.S.
Ears	122	14%	186	14%	58	5.5	91	5.5	1.0	0.98	N.S.
Eyes	183	21%	293	22%	85	8.1	148	9.0	1.0	0.99	N.S.
Lungs	86	10%	140	11%	44	4.2	80	4.8	0.96	1.0	N.S.
Heart	104	12%	201	15%	55	5.2	99	6.0	1.1	0.97	N.S.
Vascular system	60	7%	133	10%	29	2.8	76	4.6	0.79	1.1	N.S.
Abdomen	181	21%	295	23%	90	8.6	141	8.5	1.0	0.97	N.S.
Rectum	275	31%	452	35%	146	13.9	239	14.5	0.99	1.0	N.S.
Endocrine system	27	3%	40	3%	13	1.2	25	1.5	0.88	1.1	N.S.
G-U system	135	15%	223	17%	54	5.1	90	5.4	1.0	1.0	N.S.
Extremities	235	27%	370	28%	90	8.6	144	8.7	1.0	0.98	N.S.
Spine	101	11%	117	9%	52	4.9	66	4.0	1.2	0.88	N.S.
Body marks	549	62%	793	61%	145	13.8	216	13.1	1.1	0.96	N.S.
Skin	276	31%	413	32%	132	12.5	203	12.3	1.0	0.98	N.S.
Neurologic	31	4%	67	5%	23	2.2	41	2.5	1.0	0.99	N.S.
Psychiatric	10	1%	28	2%	4	0.4	15	0.9	0.60	1.2	N.S.
Pelvis	5	1%	14	1%	2	0.2	2	0.1	1.2	0.87	--

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMU5

MB12F

Table 6.17 Number and percent of abnormal clinical evaluations ever present and rate of occurrence per 1000 person years (PY) after first tour at index post from Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees by organ system

Organ Systems Which Were Clinically Evaluated	Abnormal Clinical Evaluation										P-value[2] for statistically significant differences
	Ever Present				First Present After Index Study Tour				SMBR		
	Moscow		Comparison		Moscow		Comparison				
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=314)		(N=563)		(PY=3146)		(PY=6949)				
Neck and head	42	13%	74	13%	3	1.0	4	0.6	1.3	0.84	--
Nose	31	10%	60	11%	9	2.9	29	4.2	0.80	1.1	N.S.
Mouth	48	15%	86	15%	17	5.4	38	5.5	1.0	0.99	N.S.
Ears	37	12%	61	11%	15	4.8	29	4.2	1.1	0.97	N.S.
Eyes	61	19%	106	19%	27	8.6	46	6.6	1.3	0.88	N.S.
Lungs	94	30%	137	24%	42	13.4	75	10.8	1.1	0.94	N.S.
Heart	53	17%	98	17%	21	6.7	43	6.2	1.1	0.97	N.S.
Vascular system	35	11%	66	12%	19	6.0	35	5.0	1.2	0.92	N.S.
Abdomen	61	19%	101	18%	28	8.9	62	8.9	1.0	0.98	N.S.
Rectum	56	18%	103	18%	27	8.6	57	8.2	1.0	0.98	N.S.
Endocrine system	40	13%	59	10%	18	5.7	26	3.7	1.4	0.83	N.S.
G-U system	17	5%	23	4%	4	1.3	8	1.2	1.1	0.94	--
Extremities	72	23%	138	25%	32	10.2	70	10.1	1.1	0.97	N.S.
Spine	31	10%	73	13%	17	5.4	38	5.5	1.0	1.0	N.S.
Body marks	175	56%	312	55%	48	15.3	106	15.3	1.0	1.0	N.S.
Skin	84	27%	164	29%	40	12.7	83	11.9	1.0	0.99	N.S.
Neurologic	15	5%	21	4%	9	2.9	9	1.3	1.6	0.73	N.S.
Psychiatric	7	2%	15	3%	3	1.0	10	1.4	0.75	1.1	N.S.
Pelvis	169	54%	292	52%	77	24.5	144	20.7	1.1	0.95	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: [illegible]

for males and females, respectively. These summaries were made by the physician to indicate his findings for various organ systems on each examination, thereby eliminating any problems in ascertaining the time when abnormal findings were noted for the first time after the study tour. The number of conditions reported as abnormal are presented by site. For males, Moscow and Comparison groups were very similar; no organ system showed significant differences in the frequency of abnormal findings on clinical evaluation. For females, the Moscow group was consistently higher in the frequency of abnormal clinical evaluations in the different organ systems but the SMBRs were very similar and probably not noteworthy. None of these differences among female employees were statistically significant.

Summary by Years in Moscow and Exposure to Microwaves (Tables 6.18 and 6.19

For those employees who were ever stationed in Moscow, their general medical conditions, history of disease, and findings on clinical evaluations as reported on the Medical Abstracts were analyzed according to the number of years the employees spent in Moscow (Table 6.18). In this table only those categories of clinical findings (general medical conditions, history of disease and abnormal findings on clinical evaluation) that were statistically significantly different between these time periods are presented for both males and females. For males, an abnormal finding on the present health summary, the occurrence of arthritis or rheumatism, back pain, clinical (abnormal) findings in ears, the vascular system and the skin and lymphatic system all showed progressively higher SMBRs with increasing number of years served in Moscow. For females, the numbers were very small and essentially there were no differences in health conditions when classified by number of years in Moscow, except for an increase in the frequency of vaginal discharge. The most probable reason for these increases

MB12A

Table 6.18 Number and rate of occurrence per 1000 person years (PY) after index tour and standardized morbidity ratios (SMBR)[1] of all general medical history conditions, disease history conditions, and abnormal findings on clinical evaluation items reported on Medical Abstracts, statistically significant differences by length of time in Moscow for male and female employees

Category of Clinical Findings	Years in Moscow								SMBR				P-value for statistically significant differences
	Under 2		2-3		4+		Unknown		Years in Moscow				
	No.	Rate per 1000PY	No.	Rate per 1000PY	No.	Rate per 1000PY	No.	Rate per 1000PY	Under 2	2-3	4+	Unknown	
Males	(N=316) (PY=3709)		(N=455) (PY=5570)		(N=45) (PY=679)		(N=63) (PY=568)						
General medical conditions													
Present health summary	20	5.4	54	9.7	11	16.2	9	15.8	0.65	1.1	1.7	1.5	0.05
Visual acuity	22	5.9	68	12.2	5	7.4	6	10.6	0.60	1.3	0.82	1.4	0.02
Operations	40	10.8	76	13.6	1	1.5	7	12.3	0.90	1.2	0.12	1.2	0.007
History of disease													
Arthritis/rheumatism	16	4.3	36	6.5	6	8.8	0	0	0.88	1.2	1.4	-	0.02
Back Pain	15	4.0	43	7.7	8	11.8	1	1.8	0.64	1.2	1.8	0.34	0.04
Abnormal findings on clinical evaluation													
Ears	14	3.8	31	5.6	10	14.7	3	5.3	0.65	1.0	2.7	1.0	0.02
Vascular system	3	0.8	15	2.7	8	11.8	3	5.3	0.33	0.94	3.2	1.9	0.004
Skin, lymphatics	35	9.4	71	12.7	19	28.0	7	12.3	0.78	1.0	2.1	1.0	0.02
Females	(N=100 (PY=949)		(N=168) (PY=1805)		(N=10) (PY=171)		(N=36) (PY=221)						
General medical conditions													
Vaginal discharge	4	4.2	25	13.8	3	17.5	5	22.6	0.35	1.2	1.4	1.7	0.04
History of disease													
None were significant													
Abnormal findings on clinical evaluation													
None were significant													

Standardized Morbidity of conditions rate for each time interval (2 years, 2-3 years, 4+ years and unknown years) to population condition rate adjusted for year of entry and age at entry; und. = undefined

Source: [illegible]

was the increasing age of the employees. In addition, it is noteworthy that these conditions represent only a small percentage of all the clinical conditions analysed. Table 6.19 shows the same categories of clinical findings classified by exposure to microwaves for those who ever were stationed in Moscow. The only source of information available to the study staff for classifying an individual's exposure status was the working and living area history obtained from the Health History Questionnaire. Any employee who was exposed to other than background radiation levels was classified as exposed. Individuals who worked and lived in areas where only background radiation (less than 1 microwatt per cm^2) was recorded were classified as unexposed. Individuals who did not return a Health History Questionnaire or who returned an HHQ but could not recall where and when they were located or would not say, were classified as uncertain exposure. In males, the only condition that was more frequent for those exposed in Moscow was a history of malaria, amoebic dysentery, or tropical disease. The other statistically significant conditions were more prevalent in the unexposed group. A higher frequency of the exposed females had vaginal discharge, an abnormal present health summary, boils and foot trouble. However, the number of individuals with these problems was very small.

Specific Medical Conditions (Tables 6.20 to 6.23)

In addition to the health items contained as questions on the Standard Medical Forms an attempt was made to code, using the ICDA (8th revision), all specific diseases or conditions mentioned anywhere in the employee's medical record, along with the year of onset of the condition and the source of the information (individual's own history, diagnosis of physician, hospitalization, etc.). Over 40,000 conditions were coded on more than

MB12B

Table 6.19 Number and rate of occurrence per 1000 person years (PY) after index tour and standardized morbidity ratios (SMBR)[1] of all general medical history conditions, disease history conditions and clinical evaluation items reported on Medical Abstracts with statistically significant differences by exposure to other than background traces of microwaves for Moscow male and female employees

Category of Clinical Findings	Exposure Status: Unexposed No.	Unexposed Rate per 1000PY	Exposed No.	Exposed Rate per 1000PY	Uncertain Exposure No.	Uncertain Exposure Rate per 1000PY	SMBR: Unexposed	SMBR: Exposed	SMBR: Uncertain	P-value for statistically significant differences
	(N=156)		(N=145)		(N=578)					
Males	(PY=1912)		(PY=1787)		(PY=6827)					
General medical conditions										
None were significant										
History of disease										
Brace, back support	0	0.0	7	3.9	11	1.6	und.	2.3	0.93	0.006
Malaria/amoebic dysentery, tropical disease	11	5.8	11	6.2	17	2.5	1.6	1.6	0.67	0.03
Nervous trouble	7	3.7	0	0.0	12	1.8	1.9	und.	0.97	0.01
Abnormal findings on clinical evaluation										
None were significant										
	(N=80)		(N=60)		(N=174)					
Females	(PY=850)		(PY=567)		(PY=1729)					
General medical conditions										
Vaginal discharge	3	3.5	6	10.6	28	16.2	0.33	0.92	1.3	0.03
Present health summary	8	9.4	13	22.9	18	10.4	0.71	2.0	0.86	0.05
History of disease										
Boils	1	1.1	2	3.5	8	4.6	0.12	4.9	5.1	0.05
Cramps in legs	2	2.4	0	0.0	15	8.7	0.42	und.	1.6	0.006
Foot trouble	0	0.0	1	1.8	12	6.9	und.	0.53	1.5	0.2
Clinical evaluation										
None were significant										

[1]Standardized Morbidity Ratio of condition rate for each exposure status (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und. = undefined

3000 employees whose medical records were located and abstracted. The number of conditions ranged from none in a few individual employees to over 60 for others. All conditions mentioned at any time were analyzed, but attention was focused on those conditions which could be determined as having occurred for the first time after the index study tour. Two analytic approaches were taken: a comparison of the study groups by examining the rank order of the most frequently occurring medical conditions in the Moscow and Comparison groups, and a comparison of the frequencies of 44 selected specific disease categories, computing Standardized Morbidity Ratios for each.

The 20 most frequently reported medical conditions for Moscow male employees with their corresponding rank orders for Comparison male employees and the incidence rates per 1,000 person years for each condition are presented in Table 6.20. Fifteen of these 20 most frequently reported conditions in Moscow were among the 20 most frequently found in the Comparison posts. The five most frequent conditions had the same rank order in both groups. Refractive errors of the eye were the most commonly reported problem. The Moscow individuals reported deafness (6.9/1000), inflammatory diseases of the eye (6.3/1000), chest pain (6.0/1000), other eczema and dermatitis (6.1/1000) and genito-urinary symptoms (5.9/1000) among the top 20. Conditions not presented in the tables but included in the 20 most frequent conditions for the Comparison group were: hyperplasia of the prostate (7.1/1000), synovitis, bursitis and tenosynovitis (6.2/1000), osteoarthritis and related conditions (6.1/1000), bronchitis, emphysema, asthma (6.1/1000) and other symptoms of the nervous system (5.3/1000).

The corresponding data for the 20 most frequently reported conditions among females is shown in Table 6.21. Again, most of the conditions among the 20 most frequent were the same in both Moscow and Comparison groups;

HB15M

Table 6.20 Number and rate of occurrence per 1000 person-years (PY) of the 20 most frequently reported medical conditions (ICDA 8th) in Moscow on the Medical Abstracts and the corresponding rank order for the Comparison groups for conditions first present after tour at index post among male employees

Condition (ICDA 8th)	Rank Order		Frequency[1] and Rate of Occurrence per 1000 PY			
			Moscow (PY=10526)		Comparison (PY=16496)	
	Moscow	Comparison	Frequency	Rate	Frequency	Rate
Refractive errors (370)	1	1	271	25.7	383	23.2
Hemorrhoids (455)	2	2	137	13.0	200	12.1
Symptoms referable to limbs and joints (787)	3	3	121	11.5	163	9.9
Mental disorders (300-309)	4	4	116	11.0	159	9.6
Other diseases and conditions of eye (371-379)	5	5	102	9.7	153	9.3
Vertebrogenic pain syndrome (728)	5	7	102	9.7	130	7.9
Symptoms referable to abdomen and lower G. I. tract (785)	7	8	96	9.1	123	7.5
Obesity, not specified as endocrine (277)	8	6	87	8.3	133	8.1
[2]Symptomatic heart disease (427)	9	9	79	7.5	120	7.3
Infections of skin & subcutaneous tissue (680-686)	9	19	79	7.5	93	5.6
Other deafness (389) due to unspecified cause	11	22	73	6.9	82	5.0

[1]The frequency of conditions defined by a range of codes included counts for each occurrence of any code in the range
[2]Symptomatic heart disease: These totals include Tachycardia, ICDA code 782.2. The subtotals for Moscow males and Comparison males are 6 and 11 respectively.

Source: HAMBI

Table 6.20 (Continued)

Condition (ICDA 8th)	Rank Order		Frequency[1] and Rate of Occurrence per 1000 PY			
			Moscow (PY=10526)		Comparison (PY=16496)	
	Moscow	Comparison	Frequency	Rate	Frequency	Rate
Diarrheal disease (009)	12	14	72	6.8	105	6.4
[2]Symptoms referable to respiratory system (783)	13	12	68	6.5	111	6.7
Nervousness and debility (790)	14	10	67	6.4	118	7.2
Inflammatory diseases of eye (360-369)	15	23	66	6.3	80	4.8
Hypertension benign (401)	16	15	64	6.1	103	6.2
Other eczema & dermatitis (692)	16	24	64	6.1	77	4.7
Pain in chest (783.7)	18	21	63	6.0	85	5.2
Symptoms referable to genito-urinary system (786)	19	32	62	5.9	58	3.5
Ischemic heart disease (410-414)	20	13	60	5.7	109	6.6

[1] The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range.

[2]Excludes pain in chest, ICDA code 783.7

Source: MAMB1

MB15F

Table 6.21 Number and rate of occurrence per 1000 person years (PY) of the 21[1] most frequently reported medical conditions (ICDA 8th) in Moscow on the Medical Abstracts and the corresponding rank order for the Comparison groups for conditions first present after tour at index post among female employees

Condition (ICDA 8th)	Rank Order		Frequency[2] and Rate of Occurrence per 1000 PY			
			Moscow (PY=3146)		Comparison (PY= 6949)	
	Moscow	Comparison	Frequency	Rate	Frequency	Rate
Diseases of menstruation (626)	1	1	73	23.2	160	23.0
Refractive errors (370)	2	2	62	19.7	125	18.0
Symptoms referable to limbs and joints (787)	3	3	55	17.5	103	14.8
Infective diseases of cervix uteri (620)	4	6	45	14.3	64	9.2
Hemorrhoids (455)	5	6	35	11.1	64	9.2
Obesity, not specified as endocrine (277)	6	11	34	10.8	52	7.5
Chronic cystic disease of breast (610)	6	12	34	10.8	51	7.3
Other operation on uterus and supporting structures (70) (D & C (70.3))	8	9	29 (21)	9.2 (6.7)	62 (41)	8.9 (5.9)
Other diseases of cervix (621)	9	8	27	8.6	63	9.1
Mental disorders (300-309)	10	5	26	8.3	65	9.4
Hysterectomy (69)	11	23	24	7.6	40	5.8
[3]Symptoms referable to respiratory system (783)	11	14	24	7.6	46	6.6

[1]There are 21 conditions mentioned because of ties in frequencies.

[2]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

[3]Excludes pain in chest, ICDA code 783.7

Source: [illegible]

Table 6.21 (Continued)

Condition (ICDA 8th)	Rank Order		Frequency[2] and Rate of Occurrence per 1000 PY			
			Moscow (PY=3146)		Comparison (PY=6949)	
	Moscow	Comparison	Frequency	Rate	Frequency	Rate
Other diseases of female genital organs (629)	11	13	24	7.6	47	6.8
Diarrheal disease (infectious, unknown causative agent) (009)	14	14	23	7.3	46	6.6
Infective diseases of uterus, (except cervix) vagin and vulva (622)	15	27	22	7.0	33	4.7
Vertebrogenic pain syndrome (728)	15	19	22	7.0	42	6.0
Uterine fibroma (218)	15	10	22	7.0	53	7.6
Symptoms referable to abdomen and lower G.I. tract (785)	18	19	21	6.7	42	6.0
Diarrheal disease due to specified organism (000-008)	19	45	20	6.4	19	2.7
Other diseases and conditions of eye (371-379)	19	25	20	6.4	36	5.2
Diseases of blood and blood forming organs (280-289)	19	18	20	6.4	43	6.2

[2]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

Source: MANBI

these included: hysterectomy (7.6/1000), infectious diseases of the uterus (7.0/1000), other diseases and conditions of the eye (6.4/1000), and diarrheal disease (6.4/1000). Those conditions which were among the 20 most frequent in the Comparison female group and not shown in Table 6.21 were: nervousness and debility (9.6/1000), cardiovascular and lymphatic system (6.6/1000), bronchitis, emphysema, asthma (6.3/1000), and gastro-intestinal symptoms (6.0/1000); the most common condition in both groups was menstrual disorders with a frequency of 23.2 and 23.0 in Moscow and Comarison females respectively; refractive errors of the eye were the second most common condition in both groups with a rate of 19.7 in Moscow as compared to 18.0 in the Comparison groups.

In the 21 most frequent conditions in the Moscow female group shown in Table 6.21, the incidence was higher among Moscow than Comparison individuals in 18 of the total 21 conditions. In males, the rates were higher in 16 of the 20 most frequent conditions listed in Table 6.20.

Tables 6.22 and 6.23 present occurrence rates for 44 selected medical conditions reported as part of routine or special medical examinations that were ever present or reported as first being present after the index study tour. Basically, the Moscow and Comparison groups are very similar. The Standardized Morbidity Ratios are higher in the Moscow employees for about half of the conditions among both males and females. The only statistically significant differences, for conditions present after the index tour, were in male employees where the Moscow group had higher rates than the Comparison group, for protozoal intestinal diseases, benign neoplasms, and diseases of peripheral nerves and ganglia. The rate for pneumonia was significantly higher in the Comparison individuals. For females, the only conditions that were significantly higher in Moscow

Table 6.22 Number and percent of selected medical conditions ever present (ICDA 8th Revision) and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=879)		Comparison (N=1303)		Moscow (PY=10526)		Comparison (PY=16496)		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Amebiasis (006)	52	6%	85	7%	21	2.0	41	2.5	0.86	1.1	N.S.
Protozoal intestinal disease (007)	24	3%	12	1%	21	2.0	8	0.48	1.7	0.48	0.001
Diarrheal disease (009)	148	17%	208	16%	58	5.5	95	5.8	0.97	1.0	N.S.
Herpes Simplex (054)	18	2%	20	2%	8	0.76	5	0.30	1.5	0.65	N.S.
Measles (055)	155	18%	309	24%	2	0.19	9	0.55	0.50	1.3	N.S.
Infectious hepatitis (070)	31	4%	43	3%	7	0.66	11	0.67	1.0	0.97	N.S.
Mumps (072)	156	18%	266	20%	9	0.86	19	1.2	0.81	1.1	N.S.
Dermatophytosis (110)	96	11%	125	10%	42	4.0	60	3.6	1.0	0.99	N.S.
Helminthiasis (120-129)	28	3%	45	3%	11	1.0	27	1.6	0.70	1.2	N.S.
Malignant skin neoplasm (173)	18	2%	26	2%	15	1.4	15	0.90	1.3	0.80	N.S.
Malig.neoplasm,exc.skin(140-209)	16	2%	34	3%	13	1.2	24	1.5	0.95	1.0	N.S.
Benign neoplasms (210-238)	171	19%	245	19%	119	11.3	151	9.2	1.2	0.90	0.04
Diabetes mellitus (250)	25	3%	32	2%	22	2.1	26	1.6	1.2	0.87	N.S.
Obesity (non-endocrine) (277)	157	18%	232	18%	82	7.8	130	7.9	0.98	1.0	N.S.
Blood diseases (280-289)	56	6%	72	6%	34	3.2	40	2.4	1.2	0.87	N.S.
Neuroses, personality disorders (300-309)	134	15%	186	14%	82	7.8	122	7.4	1.0	0.98	N.S.
Migraine (346)	10	1%	14	1%	2	0.19	6	0.36	0.62	1.3	--
Diseases of nerves and peripheral ganglia (350-358)	46	5%	51	4%	32	3.0	32	1.9	1.3	0.80	0.05
Inflammatory eye diseases(360-369)	95	11%	134	10%	47	4.5	70	4.2	1.0	1.0	N.S.
Eye: Refractive errors (370)	380	43%	592	45%	178	16.9	276	16.7	1.0	0.98	N.S.
Eye: Other conditions (371-379)	137	16%	206	16%	77	7.3	128	7.8	1.0	1.0	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry;

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: [illegible], MACRFA

Table 6.22 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=879)		Comparison (N=1103)		Moscow (PY=10526)		Comparison (PY=16496)		SMBR		
	No.	%	No.	%	No.	Rate per 1 000 PY	No.	Rate per 1 000 PY	Moscow	Comparison	
Diseases of ear and mastoid (380-389)	196	22%	272	21%	117	11.1	149	9.0	1.1	0.92	N.S.
Hypertensive disease (400-404)	114	13%	169	13%	61	5.8	99	6.0	1.0	0.97	N.S.
Ischemic heart disease (410-414)	44	5%	64	5%	39	3.7	59	3.6	1.2	0.90	N.S.
Other forms of heart disease (420-429)	112	13%	184	14%	82	7.8	131	7.9	1.0	0.96	N.S.
Diseases of arteries, arteroids, capillaries (440-448)	38	4%	60	5%	33	3.1	51	3.1	1.3	0.88	N.S.
Diseases of veins, lymphatitis (450-458)	350	40%	541	42%	168	16.0	271	16.4	0.99	1.0	N.S.
Acute respiratory infections except influenza (460-466)	157	18%	193	15%	79	7.5	94	5.7	1.2	0.90	N.S.
Influenza (470-474)	84	10%	96	7%	40	3.8	41	2.5	1.2	0.86	N.S.
Pneumonia (480-486)	58	7%	121	9%	14	1.3	42	2.5	0.6	1.2	0.02
Bronchitis, emphysema, asthma (490-493)	99	11%	144	11%	48	4.6	87	5.3	0.95	1.0	N.S.
Other disease upper respiratory tract (500-508)	176	20%	289	22%	80	7.6	125	7.6	0.98	1.0	N.S.
Other diseases of respiratory system (510-519)	116	13%	152	12%	68	6.5	90	5.4	1.1	0.93	N.S.
Diseases of esophagus, stomach and duodenum (530-537)	130	15%	230	18%	76	7.2	137	8.3	0.93	1.0	N.S.
Hernia of abdominal cavity (550-553)	87	10%	139	11%	56	5.3	79	4.8	1.1	0.92	N.S.

[2] N.S. = Not Significant, P-value greater than .05

Table 6.22 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=879)		Comparison (N=1303)		Moscow (PY=10526)		Comparison (PY=16496)		SMRR		
	No.	%	No.	%	No.	Rate per 1 000 PY	No.	Rate per 1 000 PY	Moscow	Comparison	
Other diseases of intestine and peritoneum (560-569)	137	16%	226	17%	71	6.7	137	8.3	0.90	1.1	N.S.
Diseases of liver, gall bladder, pancreas (570-577)	62	7%	101	8%	33	3.1	50	3.0	1.1	0.96	N.S.
Diseases of genitourinary system (580-629)	255	29%	407	31%	162	15.4	268	16.2	1.0	1.0	N.S.
Diseases of skin and subcutaneous tissue (680-709)	403	46%	567	44%	239	22.7	331	20.0	1.1	0.95	N.S.
Diseases of musculoskeletal system and connective tissue (710-738)	334	38%	530	41%	227	21.6	376	22.8	0.99	1.0	N.S.
Nervousness and debility (790)	99	11%	151	12%	59	5.6	100	6.1	0.96	1.0	N.S.
Accidents, poisonings, violence (800-999)	427	49%	552	42%	211	20.0	288	17.4	1.1	0.96	N.S.
Accidents, external cause (E800-E999)	171	19%	217	17%	86	8.2	102	6.2	1.1	0.91	N.S.

[2]N.S. = Not Significant, P-value greater than .05

Source: MAMB7, MAMB7A

MB16F

Table 6.23 Number and percent of selected medical conditions ever present (ICDA 8th Revision) and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Medical Abstracts and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees

Condition (ICDA 8th)	Condition Ever Present: Moscow (N=314) No.	%	Comparison (N=563) No.	%	Condition First Present After Index Study Tour: Moscow (PY=3146) No.	Rate per 1000PY	Comparison (PY=6949) No.	Rate per 1000PY	SMBR: Moscow	Comparison	P-value[2] for statistically significant differences
Amebiasis (006)	25	8%	49	9%	11	3.5	11	1.6	1.6	0.72	N.S.
Protozoal intestinal disease (007)	9	3%	4	1%	6	1.9	2	0.29	2.1	0.39	--
Diarrheal disease (009)	46	15%	84	15%	23	7.3	45	6.5	1.1	0.95	N.S.
Herpes simplex (054)	0	0%	7	1%	0	0.0	3	0.43	und.	1.4	--
Measles (055)	36	11%	103	18%	2	0.64	4	0.58	1.1	0.97	--
Infectious hepatitis (070)	2	1%	17	3%	0	0.0	3	0.43	und.	1.5	--
Mumps (072)	40	13%	67	12%	3	0.95	5	0.72	1.2	0.90	--
Dermatophytosis (110)	10	3%	14	2%	5	1.6	10	1.4	1.0	0.99	N.S.
Helminthiasis (120-129)	7	2%	13	2%	0	0.0	4	0.58	und.	1.4	--
Malignant skin neoplasm (173)	3	1%	5	1%	1	0.32	2	0.29	0.85	1.1	--
Malig.neoplasm,exc.skin(140-209)	22	7%	34	6%	17	5.4	29	4.2	1.2	0.92	N.S.
Benign neoplasms (210-228)	110	35%	213	38%	64	20.3	140	20.1	0.99	1.0	N.S.
Diabetes mellitus (250)	7	2%	14	2%	2	0.64	14	2.0	0.4	1.3	N.S.
Obesity (non-endocrine) (277)	68	22%	104	18%	35	11.1	51	7.3	1.2	0.89	N.S.
Blood diseases (280-289)	40	13%	68	12%	19	6.0	40	5.8	1.0	0.99	N.S.
Neuroses, personality disorders (300-309)	39	12%	76	13%	22	7.0	50	7.2	1.0	1.0	N.S.
Migraine (346)	14	4%	16	3%	5	1.6	5	0.72	1.7	0.71	--
Diseases of nerves and peripheral ganglia (350-358)	12	4%	27	5%	6	1.9	19	2.7	0.80	1.1	N.S.
Inflammatory eye diseases (360-369)	21	7%	39	7%	11	3.5	18	2.6	1.2	0.90	N.S.
Eye: Refractive errors (370)	131	42%	230	41%	56	17.8	115	16.5	1.1	0.97	N.S.
Eye: Other conditions (371-379)	34	11%	58	10%	18	5.7	33	4.7	1.1	0.94	N.S.
Diseases of ear & mastoid (380-389)	42	13%	74	13%	27	8.6	52	7.5	1.0	0.98	N.S.

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: MAMB7, MAMB7A

Table 6.23 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=314)		Comparison (N=563)		Moscow (PY=3146)		Comparison (PY=6949)		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Hypertensive disease (400-404)	31	10%	67	12%	16	5.1	43	6.2	0.94	1.0	N.S.
Ischemic heart disease (410-414)	11	4%	22	4%	5	1.6	18	2.6	0.64	1.2	N.S.
Other forms of heart disease (420-429)	49	16%	76	13%	26	8.3	49	7.1	1.1	0.94	N.S.
Diseases of arteries, arterioles, capillaries (440-448)	12	4%	24	4%	5	1.6	17	2.4	0.67	1.2	N.S.
Diseases of veins, lymphatitis (450-458)	119	38%	195	35%	59	18.8	108	15.5	1.2	0.93	N.S.
Acute respiratory infections except influenza (460-466)	39	12%	76	13%	19	6.0	46	6.6	0.90	1.0	N.S.
Influenza (470-474)	25	8%	44	8%	11	3.5	18	2.6	1.1	0.93	N.S.
Pneumonia (480-486)	20	6%	43	8%	5	1.6	20	2.9	0.63	1.2	N.S.
Bronchitis, emphysema, asthma (490-493)	24	8%	57	10%	11	3.5	36	5.2	0.78	1.1	N.S.
Other diseases of upper respiratory tract (500-508)	76	24%	127	23%	23	7.3	63	9.1	0.82	1.1	N.S.
Other diseases of respiratory system (510-519)	34	11%	56	10%	19	6.0	34	4.9	1.2	0.92	N.S.
Diseases of esophagus, stomach and duodenum (530-537)	33	11%	57	10%	16	5.1	44	6.3	0.86	1.1	N.S.
Hernia of abdominal cavity (550-553)	8	3%	19	3%	7	2.2	17	2.4	0.84	1.1	N.S.
Other diseases of intestine and peritoneum (560-567)	48	15%	72	13%	21	6.7	49	7.1	1.0	1.0	N.S.
Diseases of liver, gallbladder, pancreas (570-577)	21	7%	30	5%	10	3.2	15	2.2	1.4	0.84	N.S.

[2]N.S. = Not Significant, P-value greater than .05

Table 6.23 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=314)		Comparison (N=563)		Moscow (PY=3146)		Comparison (PY=6949)		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Diseases of genitourinary system (580-629)	239	76%	403	72%	155	49.3	291	41.9	1.0	0.98	N.S.
Complications of pregnancy, childbirth & puerperium (630-678)	19	6%	19	3%	11	3.5	9	1.3	1.7	0.67	0.04
Disease of skin and subcutaneous tissue (680-709)	117	37%	202	36%	65	20.7	131	18.9	1.0	0.99	N.S.
Disease of musculoskeletal system & connective tissue (710-738)	128	41%	212	38%	81	25.7	150	21.6	1.1	0.96	N.S.
Nervousness & debility (790)	39	12%	83	15%	17	5.4	52	7.5	0.80	1.1	N.S.
Accidents, poisonings, violence (800-999)	111	35%	222	39%	51	16.2	111	16.0	1.0	0.99	N.S.
Accidents, external cause (E800-E999)	45	14%	75	13%	18	5.7	51	7.3	0.82	1.1	N.S.

[2]N.S. = Not Significant, P-value greater than .05

Source: NAMB7

employees were protozoal intestinal disease and complications of pregnancy and childbirth.

The occurrence of these same 44 conditions was also studied according to microwave exposure status (Table 6.24). None of the differences among the women were statistically significant at the .05 probability level. The three conditions previously found to differ between Moscow and Comparison male employees did not differ by exposure status among the Moscow males. However, three other conditions did differ in rate of occurrence: respiratory tract problems and nervous debility were both higher in the unexposed group; cancers, excluding skin cancer, was somewhat elevated in the exposed group (6 cases) with the largest difference between the exposed and uncertain exposure group, the latter having 3 cases.

There were 13 males among the Moscow employees who reported cancer (other than skin cancer) at 20 sites and 25 Comparison males who reported cancer at 30 sites. The cancer sites differed widely: three cases each of lung and bladder cancer were reported in the Moscow group, while three cases each of bone cancer and polycythemia vera were reported in the Comparison group. There were two cases of secondary neoplasms of unspecified site in the Moscow group; in the Comparison group there were 2 cases each of cancer of the tongue, prostate, bladder, lymphoid tissue and ill-defined sites. Each of the remaining types of cancer occurred in only one individual. For the Moscow group, these types included the large intestine, pancreas, nose, melanoma of the skin, prostate, testis, eye, secondary lymph nodes, secondary respiratory or digestive system, myeloid leukemia, unspecified leukemia, and one ill-defined site. For the Comparison group the cancer sites included: lip, mouth, stomach, large intestine, rectum, nose, larynx, melanoma of the skin, genital organs, brain, secondary lymph nodes, secondary digestive

MB17

Table 6.24 Number and rate of occurrence of conditions reported on Medical Abstracts per 1000 person years (PY) after first tour in Moscow and standardized morbidity ratios (SMBR)[1] for male and female employees by exposure to other than background levels of microwave radiation

Condition (ICDA 8th)	Exposure Status						SMBR			P-value for statistically significant differences
	Unexposed		Exposed		Uncertain					
	No.	Rate per 1000PY	No.	Rate per 1000PY	No.	Rate per 1000PY	Unexposed	Exposed	Uncertain	
Males	(PY=1912)		(PY=1787)		(PY=6827)					
All cancer except skin (140-209)	4	2.1	6	3.4	3	0.44	1.5	2.3	0.39	0.02
Other diseases of upper respiratory tract (500-508)	22	11.5	17	9.5	41	6.0	1.6	1.3	0.78	0.03
Nervousness and debility (790)	20	10.5	9	5.0	30	4.4	1.7	0.87	0.81	0.05
Females										
None significantly different										

[1] Standardized Morbidity Ratio of condition rate for each exposure status (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age of entry.

Source: MAMB7B

or respiratory systems, other secondary neoplasms and one unspecified site.

The situation for malignant neoplasms (excluding skin) in female employees as reported on the Medical Abstracts was similar to that in males in that the cancer cases differed widely in type. The SMBRs for Moscow females was 1.2 in contrast to 0.92 for Comparison group females (Table 6.23). It is of interest, however, that even though the female employees were far fewer in number than the males, the females had more cancer—46 (17 of the Moscow females and 29 of the Comparison females) in contrast to 37 male employees with cancer. The 17 Moscow women more frequently reported multiple cancers, having cancer at 28 sites versus 42 sites reported by the 29 Comparison women. The various sites were categorized as follows: (M = Moscow and C = Comparison posts) 10 breast cancers (3M and 7C); 8 melanomas of the skin (4M and 4C); 8 cancers with site unspecified (3M and 5C); 5 uterine cancers (2M and 3C); 5 secondary respiratory or digestive system cancers (2M and 3C); 3 of lung (1M and 2C); ovaries (0M and 3C) and 3 other secondary cancer (2M and 1C); 2 of salivary gland (1M and 1C); 2 eye (1M and 1C); 2 nose (1M and 1C); 2 cervix (1M and 1C); 2 ill-defined sites (1M and 1C); and, finally, 1 each of tongue (M), esophagus (C), stomach (C), large intestine (M), rectum (C), liver (C), pancreas (C), bone (C), urinary organs (M), brain (C), endocrine glands (C), secondary lymph nodes (C), lymphoid tissue (M), lymphatic leukemia (M), and myelofibrosis (M). Although only 4 of the 28 cancers in the Moscow women and 5 of the 42 cancers in Comparison women were coded as being secondary, undoubtedly some of the other sites represented metastatic disease, but the primary site could not be discerned from the medical record.

HEALTH HISTORY QUESTIONNAIRE

Table 6.25 shows the number and percent of State and Non-State Department employees who responded to the complete version of the Health History Questionnaire (HHQ) by sex, study group and person years observed. Person years at risk for the development of diseases or conditions were accumulated from the time of arrival at the index post until time of last observation. There were 812 respondents (73% were males) who had served in Moscow and 914 respondents (66% were males) who had served in one or more of the Comparison posts but not in Moscow. The Moscow men tended to be younger on arrival at the post than those in the Comparison posts, except for the last time period (1972 and after) when they were similar in age at arrival. The pattern in women varied with very similar distributions for the two study groups during 1961 to 1966 and from 1967 to 1971, but the Moscow women were younger in 1953 to 1960 and from 1972 on. The differences in age distribution, although not great, emphasize the need for adjustment of the rates of occurrence of diseases and conditions for both age and time of entry. Of course, the length of time of observation differed dramatically for individuals who entered the study in the different time periods, ranging from over 20 years to only 1 year for those who arrived at a study post for the first time just prior to 1976. Overall, however, the average time of observation (i.e., time at risk) was somewhat less for the Moscow individuals of both sexes than for the Comparison group (11.9 versus 13.6 years for the men and 10.0 versus 13.7 years for the women).

In addition to disease and other health conditions, the HHQ attempted to determine many factors that could affect the health status such as cigarette smoking, exposure to occupational hazards such as radiation (other than microwave radiation) or chemicals, lifetime residence history and other

Table 6.25 Number and percent of State and Non-State Department employees who returned a Health History Questionnaire, person years observed and percent of person years observed by year and age at arrival at post by sex and post

Arrival at Post		Males								Females							
		Moscow				Comparison				Moscow				Comparison			
		Persons		Person		Persons		Person		Persons		Person		Persons		Person	
Year	Age	No.	%	Years	%	No.	%	Years	%	No.	%	Years	%	No.	%	Years	%
Total		593		7029	100%	605		8249	100%	219		2189	100%	309		4222	100%
1953-60 Total		162	100%			246	100%			45	100%			115	100%		
	<35	89	55%	1863	27%	108	44%	2329	28%	27	60%	569	26%	58	50%	1240	29%
	35-44	61	38%	1263	18%	86	35%	1803	22%	15	33%	316	14%	42	37%	890	21%
	45-54	12	7%	236	3%	42	17%	864	10%	2	4%	40	2%	12	10%	245	6%
	55+	0	0%	0	0%	10	4%	208	3%	1	2%	17	1%	3	3%	65	2%
1961-66 Total		165	100%			125	100%			44	100%			87	100%		
	<35	93	56%	1263	18%	58	46%	807	10%	18	41%	234	11%	35	40%	479	11%
	35-44	56	34%	759	11%	39	31%	551	7%	21	48%	286	13%	32	37%	444	11%
	45-54	16	10%	219	3%	25	20%	330	4%	4	9%	55	3%	16	18%	220	5%
	55+	0	0%	0	0%	3	2%	44	1%	1	2%	11	1%	4	5%	50	1%
1967-71 Total		114	100%			107	100%			50	100%			53	100%		
	<35	63	55%	512	7%	62	58%	528	6%	21	42%	177	8%	21	40%	167	4%
	35-44	36	32%	301	4%	24	22%	199	2%	13	26%	114	5%	14	26%	125	3%
	45-54	14	12%	124	2%	20	19%	162	2%	13	26%	117	5%	12	23%	100	2%
	55+	1	1%	7	<1%	1	1%	8	<1%	3	6%	23	1%	6	11%	46	1%
1972+ Total		152	100%			127	100%			80	100%			54	100%		
	<35	77	51%	249	4%	73	57%	256	3%	33	41%	118	5%	16	30%	50	1%
	35-44	42	28%	141	2%	33	26%	102	1%	22	28%	50	2%	12	22%	33	1%
	45-54	21	14%	74	1%	11	9%	39	<1%	20	25%	51	2%	12	22%	37	1%
	55+	12	8%	18	<1%	10	8%	19	<1%	5	6%	11	1%	14	26%	31	1%

Source: HHQMB6 and MAMB4

factors. Time and resources did not permit extensive comparisons of the study groups on factors which might have had an effect on the observed health status. However, it was possible to examine perhaps the most important factor, cigarette smoking. The results are shown in Table 6.26 and the similarity of distribution of years of cigarette smoking between the two study groups for both men and women was remarkable. Consequently, the results of any of the comparisons in different indices of health status obtained from the HHQ between the Moscow and Comparison study groups cannot be attributed to differences in cigarette smoking habits.

The HHQ inquired about the presence of some 28 specific medical conditions (see Table 6.27), when they first occurred, and whether they had required treatment by a physician or had resulted in a hospitalization. The results are presented separately for males (Table 6.27) and females (Table 6.29). The prevalence (whether ever present) of each condition is given, as is the incidence rate per 1000 person years at risk for conditions that developed after arrival at index post, and Standardized Morbidity Ratios (SMBRs) adjusted for age and year of entry. These ratios measure the incidence of each specified medical condition in the Moscow and Comparison groups relative to the incidence in the total (combined) populations.

For males, examination of the SMBRs in Table 6.27 shows the two groups to be similar in the frequency of the listed conditions except for 8 conditions, 4 of which were higher in the Moscow group (eye problems, stroke, psoriasis, and other skin conditions) and 4 of which were higher in the Comparison group (thrombophlebitis, epilepsy, thyroid problems, and rheumatic fever). However, for only three reported conditions were the

Table 6.26 Distribution of cigarette smoking history reported on Health History Questionnaire for Moscow and Comparison employees by sex

Sex	Number of Years of Cigarette Smoking	Moscow		Comparison	
		No.	%	No.	%
Males	Total	593	100%	605	100%
	Never smoked	183	31%	187	31%
	Less than 1 year	8	1%	6	1%
	1 - 4 years	30	5%	29	5%
	5 - 9 years	23	4%	21	4%
	10-19 years	109	18%	106	18%
	20 years or more	211	36%	223	37%
	Smoked, years unknown	17	3%	19	3%
	Unknown whether smoked	12	2%	14	2%
Females	Total	219	100%	309	100%
	Never smoked	82	37%	116	38%
	Less than 1 year	5	2%	2	1%
	1 - 4 years	7	3%	7	2%
	5 - 9 years	5	2%	4	1%
	10-19 years	38	17%	54	18%
	20 years or more	71	32%	112	36%
	Smoked, years unknown	8	4%	10	3%
	Unknown whether smoked	3	1%	4	1%

Source: MAMB4

MB20M

Table 6.27 Number and percent of general medical conditions ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Health History Questionnaires and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees

General Medical Conditions	Medical Condition Ever Present				Medical Condition First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=593)		(N=605)		(PY=7029)		(PY=8249)				
Cataracts	12	2%	18	3%	10	1.4	12	1.4	1.2	0.89	N.S.
Eye problems	185	31%	133	22%	98	13.9	65	7.9	1.3	0.76	0.002
Heart trouble	47	8%	50	8%	36	5.1	42	5.1	1.1	0.93	N.S.
Stroke	6	1%	4	1%	6	0.85	4	0.48	1.7	0.62	--
Hypertension	90	15%	121	20%	75	10.7	94	11.4	1.0	1.0	N.S.
Paralysis	10	2%	10	2%	5	0.71	5	0.6	1.1	0.95	--
Thrombophlebitis	7	1%	11	2%	3	0.43	9	1.1	0.62	1.3	N.S.
Kidney stones	59	10%	57	9%	31	4.4	33	4.0	1.0	0.97	N.S.
Diabetes	22	4%	21	3%	18	2.6	20	2.4	0.98	1.0	N.S.
Epilepsy	3	1%	2	<1%	1	0.14	2	0.24	0.60	1.5	--
Anemia	18	3%	19	3%	14	2.0	11	1.3	1.2	0.83	N.S.
Varicose veins	35	6%	35	6%	25	3.6	18	2.2	1.2	0.80	N.S.
Bronchitis	37	6%	30	5%	18	2.6	21	2.5	0.98	1.0	N.S.
Allergies	106	18%	101	17%	42	6.0	43	5.2	1.0	1.0	N.S.
Psoriasis	19	3%	8	1%	12	1.7	3	0.36	1.7	0.37	0.009
Skin conditions	92	16%	82	14%	63	9.0	45	5.4	1.2	0.81	0.04
Goiter or thyroid problem	8	1%	16	3%	3	0.43	8	1.0	0.60	1.3	N.S.
Encephalitis	1	<1%	0	0%	0	0.0	0	0.0	und.	und.	--
Hepatitis	68	11%	60	10%	19	2.7	19	2.3	1.1	0.93	N.S.
Rheumatic fever	6	1%	13	2%	1	0.14	3	0.36	0.66	1.2	--
Arthritis	66	11%	71	12%	52	7.4	55	6.6	1.0	0.95	N.S.
Tumor	120	20%	115	19%	69	9.8	59	7.2	1.2	0.85	N.S.
Gallbladder	13	2%	16	3%	8	1.1	12	1.5	0.90	1.1	N.S.
Ulcers	40	7%	41	7%	20	2.8	21	2.5	1.0	0.96	N.S.
Hernia	88	15%	96	16%	44	6.3	55	6.6	1.0	0.98	N.S.
Leukemia	1	<1%	1	<1%	1	0.14	1	0.14	1.0	0.99	--
Heart rhythm disturbance	39	7%	44	7%	27	3.8	34	4.1	1.0	1.0	N.S.
Other diseases	127	21	122	20%	84	12.0	79	9.6	1.1	0.91	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

differences statistically significant; all three were higher in the Moscow group: eye problems almost all of which were refractive errors), psoriasis (12 cases in Moscow versus 3 reported in the Comparison group), and other skin conditions (mostly cysts, dermatitis, and eczema). The other conditions in which differences were noted but were not statistically significant, had too few numbers.

Table 6.28 shows the incidence of 3 conditions which were higher in the Moscow male group, as well as every other condition listed in Table 6.27, according to exposure to the microwave beams while in the Moscow Embassy. There is no indication of any gradient in risk associated with the different exposure groups: exposed to other than background levels, unexposed to other than background levels and uncertain exposure status. Furthermore, there is no evidence of any statistically significant differences by exposure in the frequencies of the conditions listed except for hernias (higher in the unexposed group with a P-value of 0.02) and heart rhythm disturbances (higher in the exposed group with a borderline P-value of .08). Only two cases of leukemia were reported in the HHQ, one in Moscow (in the exposed group) and one in the Comparison group (Tables 6.27 and 6.28).

The comparisons of the reported histories of general medical conditions for females are shown in Table 6.29 (Moscow versus Comparison groups) and Table 6.30 (unexposed, exposed and uncertain groups). Cataracts, other eye problems (mainly refractive errors), stroke, anemia, psoriasis and ulcers were higher in the Moscow than in the Comparison group but only the differences in eye problems, anemia and ulcers approached statistical significance. No consistent patterns of increasing risk with exposure were apparent with any of these three conditions or any other of the listed items for females (see Table 6.30).

MB20BM

Table 6.28 Number and rate of occurrence per 1000 person years (PY) after first tour at index post and standardized morbidity ratios (SMBR)[1] of general medical conditions reported on Health History Questionnaires by status of exposure to other than background levels of microwave radiation for Moscow male employees

General Medical Conditions	Exposure Status in Moscow: Unexposed (PY=2158) (N=185) No.	Rate per 1000PY	Exposed (PY=2263) (N=182) No.	Rate per 1000PY	Uncertain (PY=2608) (N=226) No.	Rate per 1000PY	SMBR: Unexposed	Exposed	Uncertain	P-value[2] for statistically significant differences
Cataracts	2	0.93	2	0.88	6	2.3	0.51	0.77	1.7	--
Eye problems	28	13.0	32	14.1	38	14.6	0.93	1.0	1.1	N.S.
Heart trouble	10	4.6	10	4.4	11	4.2	1.3	0.83	0.89	N.S.
Stroke	1	0.46	0	0.0	5	1.9	0.2	und.	10.5	--
Hypertension	29	13.4	25	11.0	21	8.1	1.2	1.0	0.80	N.S.
Paralysis	1	0.46	1	0.44	3	1.2	0.52	0.67	1.9	--
Thrombophlebitis	1	0.46	1	0.44	1	0.38	1.1	1.1	0.85	N.S.
Kidney stones	10	4.6	10	4.4	11	4.2	1.1	0.91	1.0	N.S.
Diabetes	7	3.2	4	1.8	7	2.7	1.2	0.69	1.1	N.S.
Epilepsy	0	0.0	0	0.0	1	0.38	und.	und.	2.2	--
Anemia	5	2.3	5	2.2	4	1.5	1.4	0.96	0.77	N.S.
Varicose veins	6	2.8	7	3.1	12	4.6	0.73	0.90	1.3	N.S.
Bronchitis	8	3.7	4	1.8	6	2.3	1.6	0.67	0.86	N.S.
Allergies	15	7.0	9	4.0	18	6.9	1.3	0.64	1.1	N.S.
Psoriasis	2	0.93	3	1.3	7	2.7	0.66	0.70	1.5	--
Skin conditions	17	7.9	18	8.0	28	10.7	0.92	0.88	1.2	N.S.
Goiter or thyroid problem	1	0.46	1	0.44	1	0.38	1.2	1.0	0.84	--
Encephalitis	0	0.0	0	0.0	0	0.0	und.	und.	und.	--
Hepatitis	6	2.8	9	4.0	4	1.5	1.1	1.5	0.53	N.S.
Rheumatic fever	0	0.0	0	0.0	1	0.38	und.	und.	3.0	--
Arthritis	19	8.8	15	6.6	18	6.9	1.2	0.89	0.94	N.S.
Tumor	22	10.2	24	10.6	22	8.8	1.2	1.0	0.88	N.S.
Gallbladder	1	0.46	1	0.44	6	2.3	0.56	0.31	2.0	--
Ulcers	4	1.8	7	3.1	9	3.4	0.72	1.0	1.2	N.S.
Hernia	15	7.0	7	3.1	22	8.4	1.1	0.46	1.4	0.02
Leukemia	0	0.0	1	0.44	0	0.0	und.	2.8	und.	--
Heart rhythm disturbance	7	3.2	14	6.2	6	2.3	0.83	1.6	0.60	N.S. (.08)
Other diseases	28	13.0	28	12.4	28	10.7	1.1	1.0	0.92	N.S.

[1] Standardized Morbidity Ratio of condition rate for exposure group (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und.= undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Table 6.29 Number and percent of general medical conditions ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Health History Questionnaires and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees

General Medical Conditions	Medical Condition Ever Present: Moscow (N=219) No.	%	Comparison (N=309) No.	%	Medical Condition First Present After Index Study Tour: Moscow (PY=2189) No.	Rate per 1000PY	Comparison (PY=4222) No.	Rate per 1000PY	SMBR Moscow	SMBR Comparison	P-value[2] for statistically significant differences
Cataracts	9	4%	6	2%	8	3.7	6	1.4	1.7	0.64	N.S.
Eye problems	62	28%	70	23%	33	15.1	28	6.6	1.4	0.76	0.03
Heart trouble	12	5%	22	7%	7	3.2	16	3.8	0.94	1.0	N.S.
Stroke	2	1%	2	1%	2	0.91	2	0.47	2.2	0.64	--
Hypertension	28	13%	61	20%	19	8.7	51	12.1	0.85	1.1	N.S.
Paralysis	5	2%	6	2%	4	1.8	5	1.2	1.1	0.95	--
Thrombophlebitis	3	1%	12	4%	2	0.91	9	2.1	0.49	1.3	N.S.
Kidney stones	18	8%	18	6%	8	3.7	11	2.6	1.2	0.91	N.S.
Diabetes	3	1%	11	4%	3	1.4	10	2.4	0.74	1.1	N.S.
Epilepsy	1	<1%	2	1%	1	0.46	1	0.24	1.5	0.74	--
Anemia	25	11%	16	5%	16	7.3	10	2.4	1.6	0.64	0.03
Varicose veins	20	9%	21	7%	12	5.5	14	3.3	1.3	0.85	N.S.
Bronchitis	22	10%	35	11%	14	6.4	21	5.0	1.0	0.98	N.S.
Allergies	43	20%	60	19%	24	11.0	31	7.3	1.1	0.94	N.S.
Psoriasis	8	4%	3	1%	4	1.8	1	0.24	2.1	0.32	--
Skin conditions	32	15%	47	15%	17	7.8	29	6.9	0.91	1.1	N.S.
Goiter or thyroid problem	29	13%	46	15%	14	6.4	23	5.4	1.1	0.94	N.S.
Encephalitis	0	0%	1	<1%	0	0.0	0	0.0	und.	und.	--
Hepatitis	9	4%	23	7%	3	1.4	5	1.2	1.1	0.96	--
Rheumatic fever	3	1%	2	1%	1	0.46	0	0.0	1.9	und.	--
Arthritis	38	17%	69	22%	28	12.8	56	13.3	0.95	1.0	N.S.
Tumor	87	40%	122	39%	48	21.9	78	18.5	1.0	0.97	N.S.
Gall bladder	12	5%	18	6%	8	3.7	12	2.8	1.2	0.91	N.S.
Ulcers	14	6%	4	1%	6	2.7	3	0.71	2.1	0.49	0.04
Hernia	7	3%	16	5%	3	1.4	12	2.8	0.66	1.2	N.S.
Leukemia	1	<1%	0	0%	1	0.46	0	0.0	3.0	und.	--
Heart rhythm disturbance	10	5%	20	6%	7	3.2	18	4.3	0.75	1.1	N.S.
Other disease	49	22%	59	19%	34	15.5	39	9.2	1.2	0.87	N.S.

[1] Standardized Morbidity Ratios of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6

Table 6.30 Number and rate of occurrence per 1000 person years (PY) after first tour at index post and standardized morbidity ratios (SMBR)[1] of general medical conditions reported on Health History Questionnaire by status of exposure to other than background levels of microwave radiation for Moscow female employees

General Medical Conditions	Exposure Status in Moscow: Unexposed (PY=908) (N=84) No.	Unexposed Rate per 1000PY	Exposed (PY=570) (N=58) No.	Exposed Rate per 1000PY	Uncertain (PY=711) (N=77) No.	Uncertain Rate per 1000PY	SMBR: Unexposed	SMBR: Exposed	SMBR: Uncertain	P-value[2] for statistically significant differences
Cataracts	3	3.3	1	1.8	4	5.6	0.90	0.52	1.5	- -
Eye problems	12	13.2	12	21.0	9	12.7	0.87	1.3	0.90	N.S.
Heart trouble	1	1.1	2	3.5	4	5.6	0.34	0.82	2.5	- -
Stroke	1	1.1	1	1.8	0	0.0	0.93	1.3	und	- -
Hypertension	9	9.9	3	5.3	7	9.8	1.2	0.64	1.0	N.S.
Paralysis	2	2.2	1	1.8	1	1.4	1.4	1.1	0.63	- -
Thrombophlebitis	0	0.0	2	3.5	0	0.0	und	2.8	und	- -
Kidney stones	3	3.3	3	5.3	2	2.8	0.95	1.3	0.78	- -
Diabetes	0	0.0	2	3.5	1	1.4	und	1.9	0.83	- -
Epilepsy	0	0.0	1	1.8	0	0.0	und	2.0	und	- -
Anemia	5	5.5	1	1.8	10	14.1	0.82	0.22	1.9	N.S.
Varicose veins	5	5.5	6	10.5	1	1.4	1.2	1.9	0.22	0.05
Bronchitis	4	4.4	4	7.0	6	8.4	0.67	1.2	1.3	N.S.
Allergies	6	6.6	6	10.5	12	16.9	0.66	0.93	1.4	N.S.
Psoriasis	3	3.3	1	1.8	0	0.0	1.6	0.88	und	- -
Skin conditions	6	6.6	3	5.3	8	11.3	0.80	0.65	1.6	N.S.
Goiter or thyroid problem	6	6.6	4	7.0	4	5.6	1.0	1.0	0.99	N.S.
Encephalitis	0	0.0	0	0.0	0	0.0	und	und	und	- -
Hepatitis	2	2.2	0	0.0	1	1.4	1.5	und	1.1	- -
Rheumatic fever	0	0.0	0	0.0	1	1.4	und	und	2.1	- -
Arthritis	11	12.1	5	8.8	12	16.9	1.0	0.68	1.2	N.S.
Tumor	21	23.1	14	24.6	13	18.3	1.1	1.0	0.83	N.S.
Gallbladder	2	2.2	2	3.5	4	5.6	0.73	0.91	1.3	- -
Ulcers	2	2.2	0	0.0	4	5.6	0.70	und	1.7	- -
Hernia	1	1.1	1	1.8	1	1.4	0.95	1.8	0.73	- -
Leukemia	0	0.0	1	1.8	0	0.0	und	2.0	und	- -
Heart rhythm disturbance	2	2.2	1	1.8	4	5.6	0.73	0.41	2.2	- -
Other disease	13	14.3	10	17.5	11	15.5	0.98	1.0	1.0	N.S.

[1] Standardized Morbidity Ratio of condition rate for exposure group (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und.= undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

The results of responses to the series of questions on the Health History Questionnaire regarding the occurrence of a variety of symptoms are presented in Tables 6.31 to 6.34 for males and females and by exposure status for the Moscow group. A distinction was made between symptoms present for the first time after the index tour at the study post and those symptoms ever present.

There was a clear pattern of a higher frequency of symptoms reported by the Moscow group than was reported by the Comparison group. For males, of the 20 categories of symptoms, 17 of the SMBRs were higher in the Moscow group and 4 of them (depression, irritability, loss of appetite and difficulty concentrating) were statistically significantly different. However, Table 6.32 shows that within the Moscow group, all 4 of these symptoms were higher in frequency in the group classified as unexposed to microwaves than in the exposed or the uncertain groups (except for loss of appetite which was slightly higher in the uncertain group). The only symptoms which were statistically different (borderline) among the three exposure groups were depression (highest in the unexposed group, $P = .05$) and anxiety (also highest in the unexposed group, $P = .06$).

A pattern somewhat similar to the males can be seen for female employees (Table 6.33) for reported symptoms after the index tour but not as many symptoms were reported to have higher frequencies in the Moscow than in the Comparison group as was observed among males. Twelve out of the total of 20 symptoms were higher. The differences in SMBRs for only two symptoms approached statistical significance—difficulty concentrating and an aggregate category of all other symptoms. The rates of occurrence of all symptoms according to exposure status for female employees is shown in Table 6.34 and it can be seen that the symptom "difficulty concentrating" was reported nearly 3 times more frequently in

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Table 6.31 Number and percent of symptoms ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Health History Questionnaires and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison male employees

Symptoms	Symptom Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow		Comparison		Moscow		Comparison		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
	(N=593)		(N=605)		(PY=7029)		(PY=8249)				
Fainting	24	4%	24	4%	18	2.6	17	2.1	1.1	0.90	N.S.
Depression	44	7%	24	4%	38	5.4	22	2.7	1.3	0.73	0.004
Migraine	58	10%	48	8%	38	5.4	34	4.1	1.8	0.97	N.S.
Sleepiness	21	4%	22	4%	19	2.7	18	2.2	1.0	1.0	N.S.
Lassitude	51	9%	29	5%	47	6.7	28	3.4	1.2	0.78	N.S.
Irritability	40	7%	22	4%	40	5.7	20	2.4	1.3	0.66	0.009
Nervous disorders	11	2%	8	1%	11	1.6	6	0.7	1.5	0.64	N.S.
Anxiety	29	5%	32	5%	25	3.6	27	3.3	0.95	1.0	N.S.
Vibrations	97	16%	88	15%	70	10.0	64	7.8	1.1	0.91	N.S.
Intraocular pain	3	1%	8	1%	2	0.3	7	0.8	0.45	1.5	--
Sensations	16	3%	14	2%	16	2.3	11	1.3	1.2	0.78	N.S.
Loss of appetite	16	3%	13	2%	14	2.0	9	1.1	1.3	0.74	N.S.
Difficulty concentrating	36	6%	15	2%	36	5.1	12	1.5	1.4	0.52	0.001
Memory loss	30	5%	14	2%	29	4.1	11	1.3	1.6	0.50	0.008
Dizziness	39	7%	32	5%	34	4.8	26	3.2	1.2	0.85	N.S.
Finger tremor	16	3%	13	2%	16	2.3	10	1.2	1.3	0.71	N.S.
Hallucinations	3	1%	2	<1%	2	0.3	1	0.1	1.5	0.59	--
Insomnia	42	7%	42	7%	37	5.3	33	4.0	1.1	0.90	N.S.
Neurosis	4	1%	5	1%	4	0.6	2	0.2	1.4	0.62	--
Other symptoms	24	4%	18	3%	23	3.3	15	1.8	1.3	0.76	N.S.

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6

Table 6.32 Number and rate of occurrence per 1000 person years (PY) after first tour at index post and standardized morbidity ratios (SMBR)[1] for symptoms reported on the Health History Questionnaire by status of exposure to other than background levels of microwave radiation for Moscow male employees

Symptoms	Exposure Status in Moscow: Unexposed (PY=2158) (N=185) No.	Rate per 1000PY	Exposed (PY=2263) (N=183) No.	Rate per 1000PY	Uncertain (PY=2608) (N=226) No.	Rate per 1000PY	SMBR: Unexposed	Exposed	Uncertain	P-value[2] for statistically significant differences
Fainting	4	1.9	5	2.2	9	3.5	0.74	0.84	1.4	N.S.
Depression	19	8.8	8	3.5	11	4.2	1.6	0.67	0.76	0.05
Migraine	12	5.6	8	3.5	18	6.9	1.1	0.67	1.2	N.S.
Sleepiness	6	2.8	8	3.5	5	1.9	1.1	1.4	0.67	N.S.
Lassitude	16	7.4	12	5.3	19	7.3	1.1	0.81	1.1	N.S.
Irritability	17	7.9	10	4.4	13	5.0	1.3	0.82	0.87	N.S.
Nervous disorders	3	1.4	2	0.88	6	2.3	0.96	0.59	1.3	N.S.
Anxiety	14	6.5	5	2.2	6	2.3	1.7	0.65	0.65	(.06)
Vibrations	24	11.1	21	9.3	25	9.6	1.1	0.93	1.0	N.S.
Intraocular pain	1	0.46	0	0.0	1	0.38	2.1	und.	1.1	--
Sensations	5	2.3	4	1.8	7	2.7	0.95	0.80	1.2	N.S.
Loss of appetite	5	2.3	3	1.3	6	2.3	1.1	0.73	1.2	N.S.
Difficulty concentrating	14	6.5	8	3.5	14	5.4	1.2	0.75	1.0	N.S.
Memory loss	12	5.6	4	1.3	13	5.0	1.3	0.47	1.2	N.S.
Dizziness	13	6.0	12	5.3	9	3.5	1.1	1.1	0.75	N.S.
Finger tremor	8	3.7	4	1.8	4	1.5	1.4	0.80	0.74	N.S.
Hallucinations	2	0.93	0	0.0	0	0.0	2.6	und.	und.	--
Insomnia	15	7.0	10	4.4	12	4.6	1.3	0.87	0.84	N.S.
Neurosis	1	0.46	0	0.0	3	1.2	0.78	und.	2.0	--
Other symptoms	8	3.7	7	3.1	8	3.1	1.1	0.91	0.99	N.S.

[1] Standardized morbidity ratio of condition rate for exposure group (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und.= undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6B

Table 6.33 Number and percent of symptoms ever present and rate of occurrence per 1000 person years (PY) after first tour at index post reported on Health History Questionnaires and standardized morbidity ratios (SMBR)[1] for Moscow and Comparison female employees

Symptoms	Symptom Ever Present				First Present After Index Study Tour						P-value[2] for statistically significant differences
	Moscow (N=219)		Comparison (N=309)		Moscow (PY=7029)		Comparison (PY=8049)		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Fainting	12	5%	14	5%	6	0.85	12	1.5	0.89	1.1	N.S.
Depression	20	9%	33	11%	17	2.4	31	3.9	0.81	1.1	N.S.
Migraine	43	20%	41	13%	25	3.6	26	3.2	1.2	0.84	N.S.
Sleepiness	13	6%	12	4%	11	1.6	11	1.4	1.1	0.90	N.S.
Lassitude	30	14%	28	9%	25	3.6	26	3.2	1.2	0.87	N.S.
Irritability	21	10%	23	7%	19	2.7	22	2.7	1.1	0.91	N.S.
Nervous disorders	9	4%	12	4%	8	1.1	9	1.1	1.3	0.82	N.S.
Anxiety	12	5%	18	6%	10	1.4	15	1.9	0.99	1.0	N.S.
Vibrations	19	9%	28	9%	14	2.0	27	3.4	0.93	1.0	N.S.
Intraocular pain	3	1%	4	1%	2	0.28	4	0.50	0.84	1.1	--
Sensations	21	10%	27	9%	19	2.7	26	3.2	1.1	0.92	N.S.
Loss of appetite	2	1%	6	2%	2	0.28	6	0.7	0.65	1.2	--
Difficulty concentrating	17	8%	9	3%	17	2.4	9	1.1	1.6	0.58	0.02
Memory loss	9	4%	6	2%	8	1.1	6	0.7	1.6	0.67	N.S.
Dizziness	7	3%	24	8%	6	0.85	20	2.5	0.57	1.3	N.S.
Finger tremor	4	2%	7	2%	4	0.57	6	0.7	1.1	0.95	--
Hallucinations	1	<1%	3	1%	1	0.14	2	0.25	1.2	0.93	--
Insomnia	28	13%	22	7%	23	3.3	21	2.6	1.2	0.85	N.S.
Neurosis	0	0%	1	<1%	0	0.0	0	0.0	und.	und.	--
Other symptoms	13	6%	9	3%	13	1.8	6	0.75	1.8	0.51	0.01

[1] Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: IHIQMB6

Table 6.34 Number and rate of occurrence per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] for symptoms reported after first tour at index post on the Health History Questionnaire by status of exposure to other than background levels of microwave radiation for Moscow female employees

Symptoms	Exposure Status in Moscow: Unexposed (PY=908) (N=84) No.	Rate per 1000PY	Exposed (PY=570) (N=68) No.	Rate per 1000PY	Uncertain (PY=711) (N=77) No.	Rate per 1000PY	SMBR: Unexposed	Exposed	Uncertain	P-value[2] for statistically significant differences
Fainting	4	4.4	2	3.5	0	0.0	1.4	1.1	und.	- -
Depression	7	7.7	3	5.3	7	9.8	0.87	0.60	1.8	N.S.
Migraine	10	11.0	9	15.8	6	8.4	1.0	1.3	0.74	N.S.
Sleepiness	5	5.5	6	10.5	0	0.0	1.1	1.7	und.	0.03
Lassitude	8	8.8	9	15.8	8	11.3	0.83	1.4	0.90	N.S.
Irritability	6	6.6	8	14.0	5	7.0	0.70	1.5	0.97	N.S.
Nervous disorders	2	2.2	2	3.5	4	5.6	0.61	0.88	1.6	- -
Anxiety	3	3.3	4	7.0	3	4.2	0.77	1.1	1.2	- -
Vibrations	5	5.5	5	8.8	4	5.6	0.73	1.2	1.3	N.S.
Intraocular pain	0	0.0	2	3.5	0	0.0	und.	2.2	und.	- -
Sensations	7	7.7	5	8.8	7	9.8	0.83	1.1	1.2	N.S.
Loss of appetite	0	0.0	1	1.8	1	1.4	und.	1.7	1.4	- -
Difficulty concentrating	5	5.5	9	15.8	3	4.2	0.71	1.8	0.59	N.S.
Memory loss	3	3.3	3	5.3	2	2.8	0.90	1.3	0.87	- -
Dizziness	2	2.2	3	5.3	1	1.4	0.87	1.8	0.49	- -
Finger tremor	1	1.1	2	3.5	1	1.4	0.66	1.8	0.73	- -
Hallucinations	0	0.0	1	1.8	0	0.0	und.	2.0	und.	- -
Insomnia	6	6.6	9	15.8	8	11.3	0.66	1.4	1.1	N.S.
Neurosis	0	0.0	0	0.0	0	0.0	und	und	und	- -
Other symptoms	6	6.6	2	3.5	5	7.0	1.1	0.55	1.3	N.S.

[1] Standardized morbidity ratio of condition rate for exposure group (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und.= undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6B

the exposed group but this was not statistically significant; however, only 17 women in the Moscow group reported this problem. Only one symptom (sleepiness) differed statistically (borderline, P = .03) among the exposure groups—it was more frequent among the exposed—but, once again, the number of women reporting this symptom (11) was small.

An inquiry was made on the Health History Questionnaire about all hospitalizations and physician or clinic visits (other than routine) during the entire study period and the reasons for each such occurrence. Table 6.35 shows that the number of reported hospitalizations that were ever mentioned, were similar in the Moscow and Comparison groups. However, the Comparison groups, both male and female employees, reported more hospitalization after the index tour than did the corresponding Moscow group. For reasons that are entirely understandable, over one-third of the respondents did not attempt to list physician and clinic visits with the Comparison group less likely (by about 5%) to have responded. However, the frequency distributions for those who did respond, once again, are quite similar for Moscow and the Comparison groups for both sexes, with the Comparison group reporting slightly more visits after the study tour. It should be pointed out that the percentages in this table have not been corrected for the slightly longer period of observation of the employees in the Comparison posts (about 1 year on the average). The effect of correcting for this factor would make the two study groups more similar.

Information was obtained about accidents or injuries of any kind that had occurred to employees during the study period; those that occurred after arrival at the study post were analyzed separately (Table 6.36). The reported accident or injury frequencies were very similar in the two study groups with the Moscow males reporting slightly more than Comparison males and the Moscow females reporting slightly fewer than

Table 6.35 Percentage distribution of employee's hospitalizations, (excluding pregnancies) physician and clinic visits that were ever mentioned or had occurred for the first time after index tour reported on the Health History Questionnaire by sex and post

Number of Hospitalizations, Physician and Clinic Visits	Males						Females					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total employees	593	100%	605	100%	1198	100%	219	100%	309	100%	528	100%
Hospitalizations												
Ever mentioned												
None	179	30%	165	27%	344	29%	62	28%	76	25%	138	26%
One	182	31%	194	32%	376	31%	70	32%	82	27%	152	29%
Two	109	18%	126	21%	235	20%	33	15%	65	21%	98	19%
Three or more	123	21%	120	20%	243	20%	54	25%	86	28%	140	27%
After 1st tour at post												
None	337	57%	304	50%	641	54%	117	53%	138	45%	255	48%
One	144	21%	167	28%	311	26%	51	23%	77	25%	128	24%
Two or more	112	19%	134	22%	246	21%	51	23%	94	30%	145	27%
Physician and clinic visits												
Ever mentioned												
None	169	29%	142	24%	311	26%	57	26%	75	24%	132	25%
One	50	8%	59	10%	109	9%	19	9%	32	10%	51	10%
Two	51	9%	44	7%	95	8%	26	12%	13	4%	39	7%
Three or more	90	15%	90	15%	180	15%	43	20%	66	21%	109	21%
Unknown	233	39%	270	45%	503	42%	74	34%	123	40%	197	37%
After 1st tour at post												
None	232	39%	207	34%	439	37%	84	38%	109	35%	193	37%
One	48	8%	67	11%	115	10%	23	11%	31	10%	54	10%
Two or more	110	19%	111	18%	221	18%	53	24%	71	23%	124	23%
Unknown	203	34%	220	36%	423	35%	59	27%	98	32%	157	30%

Source: MAMB4

Table 6.36 Percentage distribution of employee's accidents or injuries that were ever mentioned or had occurred for the first time after index tour reported on the Health History Questionnaire by sex and post

Number Accidents or Injuries	Males						Females					
	Moscow		Comparison		Total		Moscow		Comparison		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total employees	593	100%	605	100%	1198	100%	219	100%	309	100%	528	100%
Ever mentioned												
None	308	52%	351	58%	659	55%	132	60%	181	59%	313	59%
One	169	28%	160	26%	329	27%	56	26%	86	28%	142	27%
Two	67	11%	64	11%	131	11%	21	10%	24	8%	45	9%
Three or more	49	8%	30	5%	79	7%	10	5%	18	6%	28	5%
After 1st tour at post												
None	395	67%	433	72%	828	69%	163	74%	208	67%	371	70%
One	134	23%	125	21%	259	22%	39	18%	70	23%	109	21%
Two	36	6%	31	5%	67	6%	11	5%	20	6%	31	6%
Three or more	28	5%	16	3%	44	4%	6	3%	11	4%	17	3%

Source: MAMB4

Comparison females.

Many items on the Health History Questionnaire asked employees for as many details as possible about specific diseases, conditions, reasons for hospitalizations and visits to physicians. The medical conditions reported on the HHQ for each individual employee were coded using the ICDA (8th revision); the year of first occurrence was also noted as was the source of the information (i.e., hospitalization, physician visit, or individual's history). The same 44 condition categories used to compare the medical conditions reported in the employee's medical records, were used for conditions reported on the HHQ (Tables 6.37 and 6.38). Comparisons were made of frequencies in the Moscow and Comparison groups of ever having had each of the 44 conditions and of more direct interest, the rate of occurrence of the conditions and associated Standardized Morbidity Ratios (SMBRs) after arrival at the index post. Males and females once again were analyzed separately.

The reported incidence of most conditions was so low, usually less than 3% of the employees reported having had any given category of conditions, that none of the differences between the Moscow and Comparison male employees were statistically significant, although diseases of the esophagus, stomach and duodenum (most of which were ulcers or indigestion problems for no specified reason) were almost three times as frequent in the Comparison than in the Moscow group with a P-value of .06. However, several conditions had SMBRs that were elevated in the Moscow group: skin cancers, eye problems other than refractive errors such as detached retinas (2 in Moscow, 5 in Comparison), other problems with the retina (2 in Moscow, none in Comparison) and other miscellaneous conditions (4 in Moscow, 2 in Comparison), benign neoplasms, diseases of the ear and mastoid

MB 30M

Table 6.37 Number and percent of ever present conditions (ICDA 8th) and rate of occurrence per 1,000 person years (PY) after index tour from Health History Questionnaire and standardized morbidity ratios (SMBR)[1] for male employees in Moscow and Comparison posts

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=636)		Comparison (N=664)		Moscow (PY=7431)		Comparison (PY=8924)		SMBR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000 PY	No.	Rate per 1000 PY	Moscow	Comparison	
Amebiasis (006)	16	3%	6	1%	4	0.54	4	0.45	1.0	0.97	--
Protozoal intestinal disease (007)	6	1%	0	0%	3	0.40	0	0.0	1.7	und.	--
Diarrheal disease (009)	6	1%	15	2%	4	0.54	7	0.78	0.75	1.2	N.S.
Herpes simplex (054)	1	<1%	2	<1%	1	0.13	1	0.11	1.0	1.0	--
Measles (055)	6	1%	3	<1%	0	0.0	0	0.0	und.	und.	--
Infectious hepatitis (070)	1	<1%	1	<1%	1	0.13	0	0.0	2.3	und.	--
Mumps (072)	5	1%	2	<1%	0	0.0	1	0.11	und.	2.4	--
Dermatophytosis (110)	5	1%	0	0%	3	0.40	0	0.0	1.9	und.	--
Helminthiasis (120-129)	5	1%	3	<1%	4	0.54	2	0.22	2.1	0.49	--
Malignant skin neoplasms (173)	8	1%	5	1%	7	0.94	5	0.56	1.5	0.69	N.S.
Malig. neoplasm,exc.skin(140-209)	6	1%	12	2%	4	0.54	11	1.2	0.67	1.2	N.S.
Benign neoplasms (210-238)	24	4%	22	3%	18	2.4	14	1.6	1.4	0.75	N.S.
Diabetes mellitus (250)	1	<1%	0	0%	0	0.0	0	0.0	und.	und.	--
Obesity (non-endocrine) (277)	0	0%	0	0%	0	0.0	0	0.0	und.	und.	--
Blood diseases (280-289)	3	<1%	1	<1%	2	0.27	1	0.11	1.6	0.66	--
Neuroses, personality disorders (300-309)	2	<1%	3	<1%	2	0.27	3	0.34	0.88	1.1	--
Migraine (346)	1	<1%	0	0%	0	0.0	0	0.0	und.	und.	--
Diseases of nerves and peripheral ganglia (350-358)	8	1%	8	1%	6	0.81	7	0.78	0.96	1.0	N.S.
Inflammatory eye diseases (360-369)	5	1%	3	<1%	3	0.40	2	0.22	1.2	0.79	--

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry ; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: [illegible]

Table 6.37 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=636)		Comparison (N=664)		Moscow (PY= 7431)		Comparison (PY=8924)		SMBR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000 PY	No.	Rate per 1000 PY	Moscow	Comparison	
Eye: Refractive Error (370)	0	0%	2	<1%	0	0.0	1	0.11	und.	2.4	--
Eye: Other conditions (371-379)	9	1%	12	2%	8	1.1	7	0.78	1.5	0.74	N.S.
Diseases of ear and mastoid process (380-389)	20	3%	9	1%	12	1.6	6	0.67	1.3	0.66	N.S.
Hypertensive disease (400-404)	5	1%	3	<1%	3	0.40	2	0.22	1.3	0.72	--
Ischemic heart disease (410-414)	6	1%	5	1%	6	0.81	5	0.56	1.4	0.73	N.S.
Other forms of heart disease (420-429)	5	1%	15	2%	4	0.54	12	1.3	0.60	1.3	N.S.
Diseases of arteries, arterioles, capillaries (440-448)	3	<1%	1	<1%	0	0.0	1	0.11	und.	1.8	--
Disease of veins, lymphatics (450-458)	41	6%	37	6%	22	3.0	27	3.0	0.95	1.0	N.S.
Acute respiratory infections except influenza (460-466)	20	3%	23	3%	5	0.67	4	0.45	1.2	0.85	--
Influenza (470-474)	23	4%	19	3%	7	0.94	5	0.56	1.2	0.82	N.S.
Pneumonia (480-486)	30	5%	20	3%	8	1.1	5	0.56	1.4	0.69	N.S.
Bronchitis, emphysema, asthma (490-493)	6	1%	8	1%	3	0.40	7	0.78	0.73	1.2	--
Other diseases of upper respiratory tract (500-508)	18	3%	20	3%	8	1.1	6	0.67	1.2	0.84	N.S.
Other diseases of respiratory system (510-519)	8	1%	9	1%	3	0.40	3	0.34	1.0	0.96	--

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB8, HHQMB8A

Table 6.37 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=636)		Comparison (N=664)		Moscow (PY=7431)		Comparison (PY=8924)		SMRR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000 PY	No.	Rate per 1000 PY	Moscow	Comparison	
Disease of esophogus, stomach and duodenum (530-537)	15	2%	20	3%	6	0.81	16	1.8	0.57	1.4	N.S. (.06)
Hernia of abdominal cavity (550-553)	13	2%	10	2%	9	1.2	9	1.0	1.1	0.94	N.S.
Other disease of intestine and peritoneum (560-569)	13	2%	20	3%	5	0.67	14	1.6	0.58	1.4	N.S.
Disease of liver, gall-bladder, pancreas (570-577)	6	1%	9	1%	3	0.40	5	0.56	0.79	1.2	--
Diseases of genitourinary system (580-629)	53	8%	44	7%	32	4.3	33	3.7	1.2	0.86	N.S.
Disease of skin and subcutaneous tissue(680-709)	34	8%	45	7%	15	2.0	24	2.7	0.80	1.2	N.S.
Disease of musculoskeletal system and connective tissue (710-738)	61	10%	60	9%	43	5.8	41	4.6	1.0	0.97	N.S.
Nervousness and debility (790)	2	<1%	5	1%	1	0.13	3	0.34	0.53	1.4	--
Accidents, poisonings, violence (800-999)	112	18%	96	14%	55	7.4	64	7.2	0.96	1.0	N.S.
Accidents, external cause (E800-E999)	16	3%	16	2%	8	1.1	6	0.67	1.2	0.84	N.S.

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQ8BB, HHQ8B8A

Table 6.38 Number and percent of ever present conditions (ICDA 8th) and rate of occurrence per 1,000 person years after index tour from Health History Questionnaire and standardized morbidity ratios (SMBR)[1] for female employees in Moscow and Comparison posts

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=233)		Comparison (N=320)		Moscow (PY=2324)		Comparison (PY=4342)		SMBR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000 PY	No.	Rate per 1000 PY	Moscow	Comparison	
Amebiasis (006)	4	2%	6	2%	0	0.0	3	0.69	und.	1.5	--
Protozoal intestinal disease (007)	4	2%	0	0%	2	0.86	0	0.0	1.5	und.	--
Diarrheal disease (009)	3	1%	7	2%	1	0.43	3	0.69	0.60	1.3	--
Herpes simplex (054)	0	0%	1	<1%	0	0.0	1	0.23	und.	1.2	--
Measles (055)	1	<1%	1	<1%	0	0.0	0	0.0	und.	und.	--
Infectious hepatitis (070)	0	0%	0	0%	0	0.0	0	0.0	und.	und.	--
Mumps (072)	1	<1%	0	0%	0	0.0	0	0.0	und.	und.	--
Dermatophytosis (110)	2	1%	2	1%	2	0.86	0	0.0	3.1	und.	--
Helminthiasis (120-129)	1	<1%	3	1%	0	0.0	3	0.69	und.	2.0	--
Malignant skin neoplasms (173)	1	<1%	3	1%	1	0.43	3	0.69	0.77	1.1	--
Malig.neoplasm,exc.skin (140-209)	12	5%	10	3%	10	4.3	7	1.6	1.7	0.63	N.S. (.06)
Benign neoplasms (210-238)	36	15%	55	17%	22	9.5	39	9.0	1.0	0.96	N.S.
Diabetes mellitus (250)	0	0%	0	0%	0	0.0	0	0.0	und.	und.	--
Obesity (non-endocrine) (277)	0	0%	0	0%	0	0.0	0	0.0	und.	und.	--
Blood diseases (280-289)	1	<1%	2	1%	0	0.0	1	0.23	und.	1.5	--
Neuroses, personality disorders (300-309)	1	<1%	0	0%	0	0.0	0	0.0	und.	und.	--
Migraine (346)	0	0%	<1	1%	0	0.0	1	0.23	und.	1.5	--
Diseases of nerves and peripheral ganglia (350-358)	1	<1%	6	2%	1	0.43	3	0.69	0.86	1.1	--

[1]Standardized Morbidity Ratio of condition rate for study group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Table 6.38 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=233)		Comparison (N=320)		Moscow (PY=2324)		Comparison (PY=4342)		SMBR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Inflammatory eye diseases (360-369)	1	<1%	4	1%	0	0.0	3	0.69	und.	1.3	--
Eye: Refractive error (370)	2	1%	0	0%	2	0.86	0	0.0	3.4	und.	--
Eye: Other conditions (371-379)	2	1%	0	0%	1	0.43	0	0.0	2.6	und.	--
Diseases of ear and mastoid (380-389)	7	3%	9	3%	3	1.3	4	0.92	1.2	0.91	--
Hypertensive disease (400-404)	1	<1%	3	1%	1	0.43	3	0.69	0.60	1.3	--
Ischemic heart disease (410-414)	0	0%	3	1%	0	0.0	3	0.69	und.	1.3	--
Other forms of heart disease (420-429)	0	0%	3	1%	0	0.0	2	0.46	und.	1.4	--
Diseases of arteries, arterioles, capillaries (440-448)	1	<1%	3	1%	0	0.0	3	0.69	und.	1.3	--
Disease of veins, lymphatics (450-458)	8	3%	14	4%	3	1.3	9	2.1	0.62	1.2	N.S.
Acute respiratory infections except influenza (460-466)	9	4%	8	3%	3	1.3	1	0.23	1.8	0.42	--
Influenza (470-474)	3	1%	8	3%	0	0.0	4	0.92	und.	1.4	--
Pneumonia (480-486)	11	5%	15	5%	7	3.0	9	2.1	1.2	0.89	N.S.
Bronchitis, emphysema, asthma (490-493)	4	2%	7	2%	1	0.43	5	1.2	0.55	1.2	--
Other diseases of upper respiratory tract (500-508)	4	2%	9	3%	3	1.3	6	1.4	0.80	1.1	--

[2]N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Table 6.38 (Continued)

Condition (ICDA 8th)	Condition Ever Present				Condition First Present After Index Study Tour						
	Moscow (N=233)		Comparison (N=320)		Moscow (PY=2324)		Comparison (PY=4342)		SMBR		P-value[2] for statistically significant differences
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Other diseases of respiratory system (510-519)	4	2%	2	1%	3	1.3	1	0.23	1.9	0.41	--
Disease of esophogus, stomach and duodenum (530-537)	11	5%	4	1%	2	0.86	1	0.23	1.6	0.56	--
Hernia of abdominal cavity (550-553)	2	1%	0	0%	1	0.43	0	0.0	3.1	und.	--
Other disease of intestine and peritoneum (560-569)	10	4%	13	4%	7	3.0	5	1.2	1.4	0.71	--
Disease of liver, gall bladder, pancreas (570-577)	3	1%	3	1%	1	0.43	1	0.23	1.5	0.75	--
Diseases of genitourinary system (580-629)	37	16%	57	18%	23	9.9	33	7.6	1.1	0.96	N.S.
Complications of pregnancy, childbirth, and puerperium (630-678)	2	1%	8	3%	1	0.43	4	0.92	0.67	1.1	--
Disease of skin and subcutaneous tissue (680-709)	14	6%	14	4%	5	2.2	9	2.1	1.1	0.97	--
Disease of musculoskeletal system and connective tissue 9710-738)	22	9%	46	14%	16	6.9	37	8.5	0.82	1.1	N.S.
Nervousness and debility (790)	2	1%	7	2%	0	0.0	5	1.2	und.	1.6	--
Accidents, poisonings, violence (800-999)	23	10%	39	12%	9	3.9	22	5.1	0.79	1.1	N.S.
Accidents, external cause (E800-E999)	2	1%	4	1%	2	0.86	2	0.46	1.6	0.72	--

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

:ocess, ischemic heart disease and pneumonia. Besides the stomach problems mentioned, the Comparison group also had more intestinal distress and reported nervous conditions. In terms of malignant neoplasms (other than skin) for males there were 15 reported as having occurred after arrival at the index post (4 in the Moscow group: 1 each of prostate, bladder, Hodgkins, and one unspecified site, and 11 in the Comparison group: 2 lung, 2 prostate, bladder and one each of lip, sarcoma (unspecified site), melanoma, brain, and polycythemia vera (Table 6.37). All of the 44 conditions were analyzed according to exposure status while in Moscow and only one, diseases of the ear and mastoid process differed significantly (P = .05) due entirely to a lower frequency in the uncertain exposure group (Table 6.39).

The contrast of Moscow and Comparison female employees with respect to these disease categories is shown in Table 6.38. Moscow female employees had igher SMBRs for diarrheal disease, dermatophytosis, malignant neoplasms (excluding skin), eye problems, diseases of the ear, respiratory infections, diseases of the GI tract and accidents. The difference in only one condition, malignant skin neoplasms, approached statistical significance (P=.06) with the Moscow females about three times as likely to have reported a skin neoplasm. However, Table 6.39 shows that when the 10 Moscow skin neoplasms were analyzed by exposure status, the risk was highest in the unexposed group. Female employees reported 19 malignant neoplasms (other than skin) occurring after arrival at the index post (11 in the Moscow group: 4 breast, 2 uterus, and 1 each of intestine, nose, cervix, eye, malignancy (site unspecific) and 8 in the Comparison group: 4 breast and 1 each of melanoma, cervix, lymph nodes, and malignancy (site unspecified)).

MB31

Table 6.39 Number and rate of occurrence per 1000 person years (PY) for selected diagnoses (ICDA 8th revision) and standardized morbidity ratios (SMBR)[1] from Health History Questionnaires for male and female employees classified by exposure to other than background levels of microwave radiation (all conditions which differed significantly among exposure groups were included and the one condition was statistically different in Moscow and Comparison females)

Conditions (ICDA 8th)	Exposure Status						SMBR			P-value for statistically significant differences
	Unexposed		Exposed		Uncertain					
	No.	Rate per 1000PY	No.	Rate per 1000PY	No.	Rate per 1000PY	Unexposed	Exposed	Uncertain	
Males	(PY=2232)		(PY=2309)		(PY=2890)					
Diseases of ear and mastoid process (380-389)	6	2.7	5	2.2	1	0.35	1.5	1.5	0.2	0.05
Females	(PY=948)		(PY=490)		(PY=786)					
None significant including Malignant neoplasm, except skin (140-209)	6	6.3	3	6.1	1	1.3	1.8	0.96	0.28	0.13

[1] Standardized Morbidity Ratio of condition rate for each exposure status (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age of entry.

Source: HHQMB88

SECTION 7 - THE DEPENDENTS

Every conceivable effort was made to trace the dependents of the employees in the study population, adults as well as children. Attempts were also made to obtain information on the health status of the dependents. These efforts have been described in Section 1.

Obviously, it was only possible to obtain information on the dependents of those employees who had been traced (over 95%); the best source of information were employees who had responded to the Health History Questionnaire (less than 50%). The employee's dependents, including spouses, children, ex-spouses, other relatives and unrelated dependents were identified at several points of contact with the employee: medical records, Tracing Questionnaires and Health History Questionnaires. A high response rate was expected to the HHQ which was designed to provide detailed information on all the employee's dependents, and their health status whether or not they lived at the service post. As reported in Section 3, only 52% of the State Department and 38% of the Non-State Department employees completed their HHQs. Additional time and resources would no doubt have increased this percentage considerably, since the response to the phone interview was steadily rising at the time the study had to be terminated. Consequently, the identification of the dependent population was incomplete and information on many identified dependents was not complete in details of health and residence status while at the post. The extent of incomplete ascertainment of dependents is unknown. Although more than 8,000 dependents were identified, only minimal information was available on many. The problems of incompleteness were similar for both the Moscow and Comparison groups; however, only limited inferences can be derived from the information collected.

The findings on the dependents will be presented in the same successive format as for the employees in Sections 3 to 6, namely, technical performance, description

of the dependent population, and finally the associated mortality and morbidity experiences.

TECHNICAL PERFORMANCE

A total of 8,283 dependents were identified, of whom, 5,474 (66%) were children and 2,809 (34%) adults. The type of dependent and whether or not he had lived at the employee's study posts (i.e. Moscow or Comparison posts) is presented in Table 7.1. Dependents who were definitely known to have lived in these posts will be so indicated in the tabulations in this section. There were a large number of dependents, 4,983 or 60% of the total, who either had not lived at the study posts or whose residence status was unknown. These two groups of dependents were combined for purposes of analysis, mainly because the available number did not permit stratification of children and adult dependents into more than four subgroups. The most difficult group to interpret is the Moscow non- or unknown residence group, some of whom were never in Moscow and some who may or may not have been. For the corresponding Comparison group, it is almost certain that none of them were ever in Moscow. The groups in Table 7.1 were further subdivided to show that in the Moscow non- or unknown residence group children, about 66% had not lived in Moscow and the residence status of 34% was unknown in contrast to a similar group of Comparison children, where 55% had not lived in the Comparison posts and 45% had unknown residence status. The lower frequency of the Moscow children with unknown residence status reflects the better HHQ response from the Moscow employees. For adults, the non- or unknown residence status Moscow group had 45% with unknown residence status in contrast to 57% in the Comparison group.

The percent of dependents for whom complete follow-up information was known, i.e. date when located, age at arrival at the post and year of arrival

DTP1

Table 7.1 Distribution of type of dependent of traced employees by post and whether they had lived at the employee's post

Type of Dependent	Total		Residence status of dependent at employee's post							
			Lived in				Did not live in or residence status unknown			
			Moscow		Comparison Posts		Moscow		Comparison Posts	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	8283	100%	1228	100%	2072	100%	1994	100%	2989	100%
Children	5474	66%	792	64%	1285	62%	1369	69%	2028	68%
Adults (total)	2809	34%	436	36%	787	38%	625	31%	961	32%
Spouse	2223	27%	378	31%	684	33%	457	23%	704	24%
Ex-spouse	420	5%	32	3%	76	4%	122	6%	190	6%
Other related dependents	139	2%	8	1%	25	1%	42	2%	64	2%
Unrelated dependents	27	<1%	18	2%	2	<1%	4	1%	3	<1%

Source: TPDEP

at post, was 86% for adults and 89% for children (Table 7.2). These percentages varied from 96 to 98% for those who definitely had lived at these posts and from 74 to 89% for those who either had definitely not resided at the study posts or it was unknown whether they had. These lower percentages reflect the unknown residence status of some of these individuals.

One important aspect of the study was the abstracting of information from the employees' medical records (see Sections 1 and 3). The medical records of dependents were available only for 45 to 48% of the dependents, mainly because a medical record was generally only available when the dependent had been to an overseas post. For those who had definitely lived in the study posts, 66 to 74% of adults and 69 to 72% of children had a medical record that could be abstracted. For the other residence status group, 21 to 26% of adults and 32 to 36% of children had such a record available. These lower percentages reflect the smaller number of dependents who probably were not at the study posts.

It should also be pointed out that an individual may have become a dependent after the employee's tour of duty at the study post. The employee may have married or children may have been born subsequent to this tour of duty. For some dependents, adults as well as children, the medical record became available because of a previous tour of duty at a post, but not at the posts being studied.

The number of individuals with medical records and the number of physical examinations on dependent adults and children by the employee's post are shown in Table 7.3. The median number of examinations which were present in each record (representing those that were abstracted) were similar in all posts and residence status groups for dependent children. The median number was higher for dependent adults (4 vs 3) and for those who had definitely lived at the employee's post, 5 for Moscow and 4 for the Comparison

Table 7.2 Final status of tracing, acquisition of follow-up information and availability of a medical record for abstracting by type of dependent, residence status at employee's post

Type of Dependent	Residence Status of Dependent at Employee's Post	Number of Individuals	Percent Traced	Percent with[1] Completed Follow-up Information	Percent with an Abstract from a Medical Record
Adults Total		2809	90%	86%	45%
	Lived in				
	Moscow	436	100%	97%	66%
	Comparison	787	100%	98%	74%
	Did not or not known whether lived in				
	Moscow	625	87%	80%	21%
	Comparison	961	79%	74%	26%
Children Total		5474	92%	89%	48%
	Lived in				
	Moscow	792	100%	96%	69%
	Comparison	1285	100%	96%	72%
	Did not or not known whether lived in				
	Moscow	1369	92%	89%	32%
	Comparison	2028	84%	82%	36%

[1] Follow-up information on a dependent was completed if the age of the dependent, the years that the dependent or index employee was at the study post, and a follow-up date after the study tour were all known.

Source: TPDEP

DD2

Table 7.3 Total number and median number of medical examinations abstracted by post and residence status of dependent children and adults with Medical Abstracts

Residence Status at Employee's Post	Dependent Children			Dependent Adults		
	Total No. of Individuals with Medical Records	Total No. of Examinations Reviewed	Median No. of Examinations per Individual	Total No. of Individuals with Medical Records	Total No. of Examinations Reviewed	Median No. of Examinations per Individual
Total	2628	9362	3	1253	5650	4
Lived in						
Moscow	544	2119	3	287	1437	5
Comparison	924	3539	3	581	2791	4
Did not or not known whether lived in						
Moscow	435	1457	3	133	525	3
Comparison	725	2247	2	252	897	3

Source: DDEP

posts. This was higher than the median number for the non- or unknown residents, which was 3.

During the tracing process, the vital status of the dependents was ascertained; the results for adults and children are shown in Tables 7.4 and 7.5. For adult dependents, 5% were ascertained to be dead, varying from 3 to 8% in the different groups. It was higher for those who had not lived in or whose residence status at the study posts was unknown (6 and 8%), than for those who had definitely resided at the posts (3 and 4%). The higher percent for the non- or unknown residency status group may have resulted partly from a bias in that the deaths may have been better ascertained than the living in these groups and partly because the group which lived overseas may have been selected for better health.

The difficulties in obtaining information about dependents is reflected in the fact that United States death certificates could only be obtained for 59% of the deaths among adult dependents; it varied from 37 to 70% for the different groups, and was lowest in those groups whose residency status was unknown or had definitely not resided at the study posts. Ascertainment of deaths for family members was quite high in the non- or unknown residency groups (53% for Moscow and 31% for Comparison posts)(Table 7.4).

Only a small percentage of the traced dependent children were determined to have died, varying from 1% for those who definitely had resided at study posts to 2-4% for the other groups (Table 7.5). Death certificates could only be obtained for 39% of the total group, varying from 33 to 50% for the different subgroups. The percent of deceased dependent children ascertained from a family member, varied from 36 to 43% for the different

DD5A

Table 7.4 Number and percent of adult dependents by vital status, source of death confirmation and residence status at employee's post

Source of Death Confirmation	Total		Residence status of adult dependents at employee's post: Lived in Moscow		Lived in Comparison		Did not live in or residence status unknown: Moscow		Did not live in or residence status unknown: Comparison	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total traced adult dependents	2529	100%	435	100%	787	100%	544	100%	763	100%
Total dead	136	5% (100%)	12	3% (100%)	33	4% (100%)	30	6% (100%)	61	8% (100%)
U.S. death certificate	80	59%	8	67%	23	70%	11	37%	38	62%
Report of death of an American citizen	8	6%	4	33%	2	6%	1	3%	1	2%
Family member	40	29%	0	0%	5	15%	16	53%	19	31%
Other[1]	8	6%	0	0%	3	9%	2	7%	3	5%

[1] Letter from funeral director, Departments of Vital Records, or hospital, foreign death certificate, Military casualty division.

Source: DDEP

DD5C

Table 7.5 Number and percent of dependent children by vital status, source of death confirmation and residence status at employee's post

Source of death confirmation	Total		Residence status of dependent children at employee's post							
			Lived in				Did not live in or residence status unknown			
			Moscow		Comparison		Moscow		Comparison	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total traced dependent children	5039	100%	789	100%	1285	100%	1259	100%	1706	100%
Total dead	113	2% (100%)	8	1% (100%)	14	1% (100%)	28	2% (100%)	63	4% (100%)
U.S. death certificate	44	39%	4	50%	6	43%	13	46%	21	33%
Report of death of an American citizen	14	12%	1	13%	2	14%	3	11%	8	13%
Family member	46	41%	3	38%	5	36%	11	39%	27	43%
Other[1]	9	8%	0	0%	1	7%	1	4%	7	11%

[1] Letter from funeral director, Departments of Vital Records, or hospital, foreign death certificate, Military casualty division.

Source: DDEP

comparison groups. The relatively small percentage of deaths for which death certificates could be obtained imposed limitaions on the analysis of the mortality experience, particularly for specific causes of death.

CHARACTERISTICS OF THE DEPENDENTS

Of the total dependents, both children and adults, 67% were those of State Department employees (SD). Among dependents who definitely were known to have resided in Moscow, a higher percentage were those of State Department employees than of other government agencies. This percentage was consistently lower for the Moscow than the Comparison groups (Table 7.6).

The age distribution of adult dependents at the time of entry into the study is presented in Table 7.7. Of the adults who were known to have definitely lived in the study posts, a majority of both sexes, between 63 and 80% were 25 to 44 years of age; for the other adult dependents, (25 to 44 years) it was between 38% for males and 53% for females. In this latter group, the percentages were higher in the younger ages for females and in the older ages for males; the percent with unknown ages was also higher. There were only 29 male adult dependents who were known to have definitely lived at a study post. The important aspect of these comparisons was that the age distributions were fairly similar for the Moscow and Comparison posts, within each residence status group. Since the proportion of male dependents was so small, they were grouped with the females for most subsequent analyses. Thirty nine percent of the dependent children who were known to have lived in the study posts were under five years of age at the time of entry into the study. For the other residence status group, the percentage under five years of age was 60%. The age distributions were similar in the Moscow and Comparison study posts for each of these residence status categories (Table 7.8).

DD1

Table 7.6 Number and percent of children and adult dependents by government agency of index employee, residence status and post

Type of Dependent	Residence at Post	Total Number	Government Agency of Index Employee: Percent State Dept. Employees	Government Agency of Index Employee: Percent Non-State Dept. Employees
Total		8283	67%	33%
Adults Total		2809	66%	34%
	Lived in			
	Moscow	436	75%	25%
	Comparison	787	85%	15%
	Did not or not known whether lived in			
	Moscow	625	48%	52%
	Comparison	961	60%	40%
Children Total		5474	68%	32%
	Lived in			
	Moscow	792	76%	24%
	Comparison	1285	85%	15%
	Did not or not known whether lived in			
	Moscow	1369	54%	46%
	Comparison	2028	63%	37%

Source: TPDEP

Table 7.7 Distribution of traced adult dependents by sex, age at entry into study[1] and residence status at post

Sex	Age at Entry	Total		Residence Status at Employee's Post							
				Lived in				Did not live or residence status unknown			
				Moscow		Comparison		Moscow		Comparison	
		No.	%	No.	%	No.	%	No.	%	No.	%
Males	Total	224	100%	5	100%	24	100%	65	100%	130	100%
	under 25	41	18%	1	20%	3	12%	11	17%	26	20%
	25-34	58	26%	2	40%	11	46%	15	23%	30	23%
	35-44	37	17%	2	40%	4	17%	11	17%	20	15%
	45 and over	58	26%	0	0%	3	12%	18	28%	37	28%
	unknown	30	13%	0	0%	3	12%	10	15%	17	13%
Females	Total	2305	100%	430	100%	763	100%	479	100%	633	100%
	under 25	426	18%	45	10%	44	6%	152	32%	185	29%
	25-34	890	39%	195	45%	341	45%	158	33%	196	31%
	35-44	610	26%	135	31%	239	31%	97	20%	139	22%
	45 and over	298	13%	44	10%	130	17%	39	8%	85	13%
	unknown	81	4%	11	3%	9	1%	33	7%	28	4%

[1] For dependents known to have lived at post, age of entry was age at arrival at post; for those who never lived at the post or for whom it was unknown if they had lived at the post, age at entry was taken to be their age at the year of arrival at the post of the index employee or age 0 if the dependent was born after arrival at the post.

Source: DDEP

DD3C

Table 7.8 Distribution of traced dependent children by sex, age at entry in study[1] and residence status at post

Sex	Age at Entry	Total		Residence Status at Employee's Post							
				Lived in				Did not live in or residence status unknown			
				Moscow		Comparison		Moscow		Comparison	
		No.	%	No.	%	No.	%	No.	%	No.	%
Males	Total	2579	100%	407	100%	624	100%	663	100%	885	100%
	under 5	1334	52%	147	36%	268	43%	402	61%	517	58%
	5-14	824	32%	209	51%	251	40%	166	25%	198	22%
	15 and over	337	13%	43	11%	81	13%	70	11%	143	16%
	unknown	84	3%	8	2%	24	4%	25	4%	27	4%
Females	Total	2460	100%	382	100%	661	100%	596	100%	821	100%
	under 5	1240	50%	124	32%	268	41%	367	62%	481	59%
	5-14	784	32%	197	52%	264	40%	147	25%	176	21%
	15 and over	366	15%	52	14%	99	15%	71	12%	144	18%
	unknown	70	3%	9	2%	30	5%	11	2%	20	2%

[1] For dependents known to have lived at post, age of entry was age at arrival at post; for those who never lived at the post or for whom it was unknown if they had lived at the post, age at entry was taken to be their age at the year of arrival at the post of the index employee or age 0 if the dependent was born after arrival at the post.

Source: DDEP

The year of entry into the study for dependents, adults and children is shown in Tables 7.9 and 7.10, respectively. A larger percentage of adult and children dependents had arrived earlier (before 1961) at the Comparison study posts than at Moscow, for both residency categories.

MORTALITY EXPERIENCE OF THE DEPENDENTS

As with the analysis of the employees' mortality experience, the mortality experience of the dependents is presented in the form of Standardized Mortality Ratios (SMRs). The SMRs for adult dependents are shown in Tables 7.11 to 7.14 and for dependent children in Tables 7.15 to 7.17.

Among adults it was possible to analyze 118 of the 136 deaths. (Table 7.4) Eighteen deaths, representing 15% of the total number of ascertained deaths, did not have complete follow-up information such as date of birth or years spent at any post and therefore could not be included in the analysis.

For the male adults, the SMR was 1.7 for the total Moscow group as compared to 1.1 for the Comparison posts. None of these SMRs were statistically significant compared to the mortality experience of U.S. white males. For those who had definitely lived in Moscow, no deaths were ascertained, but none would have been expected because of the small number of person-years of experience. For the remaining group of adult males (i.e. who had not lived in the study posts or whose residence status was unknown), the SMR for the Moscow group was 1.8 in contrast to 1.3 for the Comparison posts (Table 7.11).

For female adult dependents, the SMR was 0.90 for the total group, with a lower confidence limit of 0.7, which is relatively similar to other subgroups. For the various posts and categories

DD4A

Table 7.9 Distribution of traced adult dependents by year of entry into study[1] and residence status at post

Year of entry into study	Total		Residence status of adult dependents at employee's post							
			Lived in				Did not live in or residence status unknown			
			Moscow		Comparison		Moscow		Comparison	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Group	2529	100%	435	100%	787	100%	544	100%	763	100%
<1961	827	33%	101	23%	260	33%	173	32%	293	38%
1961-1966	577	23%	102	23%	163	21%	152	28%	160	21%
1967-1971	496	20%	105	24%	165	21%	86	16%	140	18%
1972-1976	608	24%	126	29%	198	25%	125	23%	159	21%
Unknown	21	1%	1	<1%	1	<1%	8	1%	11	1%

[1] For dependents known to have lived at the post, year of entry was year of arrival at post; for those who never lived at the post or for whom it was unknown if they had lived at the post, year of entry was taken to be the year of arrival at the post by the index employee.

Source: DDEP

DD4C

Table 7.10 Distribution of traced dependent children by year of entry into study[1] and residence status at post

Year of entry into study	Total		Residence status of dependent children at employee's post: Lived in Moscow		Lived in Comparison		Did not live in or residence status unknown: Moscow		Did not live in or residence status unknown: Comparison	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Group	5039	100%	789	100%	1285	100%	1259	100%	1706	100%
<1961	1279	25%	178	23%	440	34%	233	19%	428	25%
1961-1966	1327	26%	226	29%	315	25%	352	28%	434	25%
1967-1971	1133	22%	198	25%	261	20%	313	25%	361	21%
1972-1976	1293	26%	187	24%	268	21%	358	28%	480	28%
Unknown	7	<1%	0	0%	<1	1%	3	<1%	3	<1%

[1] For dependents known to have lived at the post, year of entry was year of arrival at post; for those who never lived at the post or for whom it was unknown if they had lived at the post, year of entry was taken to be the year of arrival at the post by the index employee or year of birth if the dependent was born after the arrival.

Source: DDEP

DMT 1A

Table 7.11 Standardized mortality ratio (SMR)[1], person years, observed number of deaths, and confidence limits (C.L.)[2] for adult dependents by residence status at employee's post and sex

Dependent's residence status at employee's post	Male Adults			Female Adults		
	Person Years	Observed No. of Deaths	SMR (95% C.L.)	Person Years	Observed No. of Deaths	SMR (95% C.L.)
Total	2108	29	1.3 (0.8,1.8)	26810	89	0.90 (0.7,1.1)
Moscow (total)	645	10	1.7 (0.8,3.1)	10193	27	0.91 (0.6,1.3)
Comparison (total)	1463	19	1.1 (0.7,1.7)	16617	62	0.90 (0.7,1.2)
Dependent lived in						
Moscow	64	0	0.0 (-)	4566	11	0.85 (0.4,1.5)
Comparison	253	2	0.49 (0.1,1.8)	9065	28	0.68 (0.4,1.0)
Dependent did not live in or residence status unknown						
Moscow	581	10	1.8 (0.9,3.3)	5627	16	0.95 (0.5,1.5)
Comparison	1210	17	1.3 (0.8,2.2)	7552	34	1.2 (0.8,1.7)

[1] SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study subjects from their entry year (year of arrival at post for those who were at the post, year of arrival at the post of the index employee or year of birth, whichever was later for those who either were not at the post or for whom it could not be determined whether or not at the post)

[2] Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

of residence status, the SMRs ranged from 0.68 to 1.2. For the total group of female adults there was no difference between Moscow and Comparison study posts. For those who were definitely known to have lived at the study posts the SMR for Moscow was 0.85 as compared to 0.68 for the Comparison posts, each of which was not significantly different from the U.S. mortality experience. For the other residence status group, the SMR was higher for the Comparison posts (1.2) than for Moscow (0.95). None of these were significantly different although it should be noted that the dependents with the highest SMR of 1.2 were those who had not lived or were unknown to have lived at the Comparison posts and therefore definitely had not lived in Moscow. A peculiarity in the data, which makes its interpretation difficult, is that the death rate for male adult dependents in the non- or unknown residence status group is nearly 4 times that for the females, and is probably related to the biased ascertainment of the deaths mentioned earlier.

The mortality experience by selected causes for the adult dependents is presented in Table 7.12. The male and female mortality experience had to be combined because of the small number of deaths for the selected causes. However, the expected numbers were calculated separately for males and females and then combined. For the groups of causes presented in Table 7.12, the SMRs were significantly higher than the U.S. mortality experience from malignant neoplasms as a group for 3 of the 4 study posts. For those who definitely had lived in Moscow and the Comparison posts, the SMRs for malignant neoplasms were 3.3 and 2.5, respectively; both were significantly higher than the U.S. experience. For the other residence status category, the SMRs were 2.3 for Moscow and 3.1 for the Comparison post, with only the latter statistically significant. Since the malignant neoplasm group was the only statistically significant one except

DMT2A

Table 7.12 Observed and expected number of deaths of adult dependents and standardized mortality ratios (SMR)[1] and confidence limits (C.L.)[2] by selected groups of causes[3] and residence status at employee's post

Cause of death (ICDA 7th revision)	Residence status of adult dependents at employee's post: Lived in Moscow — No. deaths Obs.	Exp.	SMR (95%C.L.)	Lived in Comparison — No. deaths Obs.	Exp.	SMR (95%C.L.)	Did not live in or residence status unknown: Moscow — No. deaths Obs.	Exp.	SMR (95%C.L.)	Comparison — No. deaths Obs.	Exp.	SMR (95%C.L.)
All causes	11	13.3	0.83 (0.4,1.5)	30	45.4	0.66 (0.4,0.9)	26	22.2	1.2 (0.8,1.8)	51	40.3	1.3 (1.0,1.7)
All malignant neoplasms (140-205)	5	1.5	3.3 (1.1,7.7)	14	5.5	2.5 (1.4,4.2)	7	3.0	2.3 (0.9,4.7)	19	6.1	3.1 (1.9,4.8)
Arteriosclerotic heart disease including CHD (420)	2	0.59	3.4 (0.4,12.3)	5	4.2	1.2 (0.4,2.8)	2	3.0	0.67 (0.1,2.4)	7	7.0	1.0 (0.4,2.1)
Selected malignant neoplasms												
Digestive organs (150-159)	1	0.26	3.8 (0.1,21.2)	6	1.3	4.6 (1.7,10.0)	0	0.70	0.0 (---)	2	1.5	1.4 (0.2,5.1)
Brain tumors & other CNS (193)	0	0.05	0 (---)	1	0.17	5.9 (0.1,32.9)	2	0.10	20.0 (2.4,72.2)	0	0.20	0 (---)
Pancreas (157)	1	0.03	33.3 (0.8,185)	1	0.20	5.0 (0.1,27.9)	0	0.12	0 (---)	1	0.26	3.8 (0.1,21.2)
Lung, primary & secondary (162-163)	0	0.12	0 (---)	2	0.45	4.4 (0.5,15.9)	1	0.44	2.3 (0.1,12.8)	5	1.0	5.0 (1.6,11.7)
Leukemia (204)	0	0.06	0 (---)	0	0.20	0 (---)	0	0.14	0 (---)	0	0.24	0 (---)
Hodgkins disease (201)	0	0.03	0 (---)	0	0.08	0 (---)	1	0.06	16.7 (0.4,93.0)	1	0.10	10.0 (0.3,55.7)
Breast (170)	1	0.40	2.5 (0.1,13.9)	2	1.3	1.5 (0.2,5.4)	0	0.51	0 (---)	4	0.94	4.3 (1.2,11.0)
Respiratory disease (470-527)	0	0.16	0 (---)	2	0.75	2.7 (0.3,9.8)	0	0.53	0 (---)	3	1.1	2.7 (0.6,7.9)
All accidents (800-936)	2	0.39	5.1 (0.6,18.4)	1	1.1	0.9 (0.0,5.0)	4	1.0	4.0 (1.1,10.2)	3	1.8	1.7 (0.4,5.0)
Suicides (963,970-979)	0	0.20	0 (---)	0	0.49	0 (---)	1	0.36	2.8 (0.1,15.6)	1	0.66	1.5 (0.0,8.4)

[1]SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study subjects from their time of arrival at first study post to time of follow-up to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMR's were computed using a computer program supplied by Monson (1).

[2]Ninety-five percent confidence limits on the SMR, assuming a Poisson distribution for deaths and a fixed number of person years.

[3]The groups of causes are as defined by Monson (1) using the ICDA 7th Revision.

[4]The experience of males and females have been added together although the expected number of deaths were calculated separately.

Source: NIHOND

for accidents which had an SMR of 4.0 for those who had not resided in Moscow, it was worthwhile to analyze the data in Table 7.12 for selected forms of malignancies.

For adult dependents who had definitely resided at a study post, the only statistically significant SMR was 4.6 for cancer of the digestive organs as a group, which was observed only in the Comparison study post group. For those who had not resided in Moscow or whose residence status was unknown, the following SMRs were statistically significant: in the Moscow group, 20.0 for brain tumors (based on only two observed deaths) and in the Comparison posts, 5.0 for lung cancer and 4.3 for breast cancer. Despite the statistical significance of these SMRs, their assessment is difficult because they are based on such small numbers of deaths. In addition, factors known to influence the occurrence of these cancers, such as cigarette smoking for lung cancer, late age at first pregnancy for breast cancer, are unknown for the individuals who had died from these specific cancers. However, it is also noteworthy that of the 4 statistically significant SMRs for selected forms of cancer deaths, 3 were present among dependents who had not lived in Moscow. This suggests that characteristics other than residence in Moscow were responsible for the higher SMRs. The similarity of SMRs for all malignant neoplasms among all four groups is undeniable.

All specific causes of death are presented in Table 7.13 for adults who resided at a study post and in Table 7.14 for adults who had not resided at the post or whose residence status at the post was unknown. All causes were included in these tables whether or not follow-up status was complete. No particular malignant neoplasm stands out as occurring more frequently in either the Moscow or Comparison group in either table, although the Comparison group had relatively more deaths from cancer than the Moscow group.

DHT3A

Table 7.13 Observed numbers of deaths and observed to expected ratios[1] by individual causes of death for adult dependents who lived in Moscow or a Comparison post

Cause of Death (ICDA 8th revision)	Observed No. of Dependents Dying from Cause		Observed to Expected Ratios	
	Lived in		Lived in	
	Moscow	Comparison	Moscow	Comparison
Total Deaths	12	33	0.80	1.1
Malignant neoplasms (total)	5	15	0.75	1.1
Tongue (141)	0	1	0.0	1.5
Pharynx (149)	0	1	0.0	1.5
Stomach (151)	0	1	0.0	1.5
Large intestine except rectum (153)	0	4	0.0	1.5
Pancreas (157)	1	1	1.5	0.75
Bronchus & lung (162)	0	2	0.0	1.1
Breast (174)	1	3	0.75	1.2
Ovary (183)	2	0	3.0	0.0
Brain (191)	0	1	0.0	1.5
Multiple myeloma (203)	1	1	1.5	0.75
Infective and parasitic diseases (000-136)	1	0	3.0	0.0
Benign neoplasm (210-238)	0	2	0.0	1.5
Disease of mitral valve (394)	0	1	0.0	1.5
Ischemic heart disease (410-414)	2	6	0.75	1.1
Cerebrovascular disease (430-438)	1	3	0.75	1.1
Respiratory system (460-519)	0	3	0.0	1.5
Diverticula of intestine (562)	0	1	0.0	1.5
Diseases of liver (571)	1	1	1.5	0.75
Motor vehicle traffic accidents (E812,E816,E819)	1	1	1.5	0.75
Other accidents (E910-E929)	1	0	3.0	0.0

[1] Observed to Expected Ratios were computed by dividing the observed number of deaths due to a given cause by the expected number for that cause. Expected numbers were computed in this table by assigning the total number for a given cause to each group in proportion to the total person years of observation for that group (PY=4630 for Moscow lived in and PY=9318 for Comparison lived in. All deaths were included in this table whether or not complete follow-up information was available. This implicitly assumed that all individuals (living or dead) without complete follow-up information had survival experience similar to those with complete follow-up. Since most individuals had completed follow-up, the effect of this assumption is of no consequence.

DMT4A

Table 7.14 Observed number of deaths and observed to expected ratios[1] by individual causes of death for adult dependents who did not live at a study post or for whom it could not be determined if they lived at a post classified by post of index employee

Cause of Death (ICDA 8th revision)	Observed No. of Dependents Dying from Cause. Did not live in or residence status unknown		Observed to Expected Ratio Did not live in or residence status unknown	
	Moscow	Comparison	Moscow	Comparison
Total Deaths	30	61	0.80	1.1
Malignant neoplasms (total)	7	21	0.60	1.3
Pancreas (157)	0	1	0.0	1.7
Bronchus and lung (162)	1	5	0.40	1.4
Respiratory organs (163)	0	1	0.0	1.7
Skin (172)	0	1	0.0	1.7
Breast (174)	0	5	0.0	1.7
Uterus (182)	0	1	0.0	1.7
Ovary (183)	0	1	0.0	1.7
Brain (191)	2	0	2.4	0.0
Liver (197)	0	1	0.0	1.7
Unspecified site (199)	3	2	1.4	0.68
Lymphosarcoma (200)	0	1	0.0	1.7
Hodgkin's disease (201)	1	1	1.2	0.85
Other neoplasms of lymphoid tissue (202)	0	1	0.0	1.7
Infective and parasitic diseases (000-136)	1	0	2.4	0.0
Central nervous system (340-349)	1	1	1.2	0.85
Ischemic heart disease (410-414)	2	8	0.48	1.4
Other heart diseases (420-429)	2	2	1.2	0.85
Cerebrovascular disease (430-438)	2	7	0.54	1.3
Arteries, arterioles, and capillaries (440-448)	0	1	0.0	1.7

[1] Observed to Expected Ratios were computed by dividing the observed number of deaths due to a given cause by the expected number for that cause. Expected numbers were computed in this table by assigning the total number for a given cause to each group in proportion to the total person years of observation for that group (PY=6208 for Moscow no/unknown and PY=8762 for Comparison no/unknown). All deaths were included in this table whether or not complete follow-up information was available. This implicitly assumed that all individuals (living or dead) without complete follow-up information had survival experience similar to those with complete follow-up. Since most individuals had completed follow-up, the effect of this assumption is of no consequence.

SOURCE: ICDADTD

Table 7.14 - continued.

Cause of Death (ICDA 8th revision)	Observed No. of Dependents Dying from Cause: Did not live in or residence status unknown — Moscow	Observed No. of Dependents Dying from Cause: Did not live in or residence status unknown — Comparison	Observed to Expected Ratio: Did not live in or residence status unknown — Moscow	Observed to Expected Ratio: Did not live in or residence status unknown — Comparison
Respiratory system (460-519)	0	3	0.0	1.7
Diseases of the liver (571)	0	2	0.0	1.7
Infections of the kidney (590)	1	0	2.4	0.0
Diffuse diseases of connective tissue(734)	0	1	0.0	1.7
Congenital anomalies of the heart (746)	1	0	2.4	0.0
Ill defined and unknown cause (790-796)	8	8	1.2	0.85
Motor vehicle traffic accidents (E812, E816, E819)	2	3	0.96	1.0
Other accidents (E910-E929)	2	3	0.96	1.0
Suicide, homicide (E950-E969)	1	1	1.2	0.85

SOURCE: ICDADTD

The total mortality experience for dependent children is shown in Table 7.15. For male children, the SMRs were not significantly different from the U.S. mortality experience except for dependents who had not lived at the Comparison posts, where it was 2.1 with a lower 95% confidence limit of 1.5. The female dependent children's SMRs were consistently higher for the Comparison than for the Moscow posts in both residence status groups. It was significantly higher than the U.S. mortality experience only for the Comparison posts in which they had not resided or in which their residence status was unknown.

Table 7.16 presents the SMRs for specific causes of death. None of the SMRs for malignant neoplasms was statistically significant. Although the SMR for those who had lived in Moscow was 3.8, this was based on only 2 cancer deaths.

Table 7.17 shows the specific causes of all children's deaths whether or not there was complete follow up information. For this analysis the children were divided according to whether their parents were ever assigned to the Moscow embassy, or whether the parents were in a Comparison post but not in Moscow. The residence status of the children during the parent's tour of duty was ignored. There were 2 leukemia deaths in the Moscow and 3 in the Comparison group, with 2 other cancer deaths in the Moscow and none in the Comparison group. The distribution of other causes of death covered a broad range with no pattern of differences between the two groups, including deaths due to congenital anomalies.

MORBIDITY EXPERIENCE

Adult Dependents

The major source of information on the morbidity experience of the adult dependents was the data abstracted from the medical records.

DMT1C

Table 7.15 Standardized mortality ratio (SMR)[1], person years, observed number of deaths, and confidence limits (C.L.)[2], for dependent children by residence status at employee's post and sex

Dependant's residence status at employee's post	Male children			Female children		
	Person years	Observed deaths	SMR (95% C.L.)	Person years	Observed deaths	SMR (95% C.L.)
Total	27640	66	1.3 (1.0,1.7)	26311	44	1.5 (1.1,2.0)
Moscow (total)	10860	22	1.2 (0.8,1.8)	10099	12	1.1 (0.6,1.9)
Comparison (total)	16780	44	1.4 (1.0,1.9)	16212	32	1.7 (1.2,2.4)
Dependent lived in						
Moscow	4436	6	0.95 (0.3,2.1)	4198	2	0.59 (0.1,2.1)
Comparison	7672	6	0.49 (0.2,1.1)	7959	7	0.97 (0.4,2.0)
Dependent did not live in or residency status unknown						
Moscow	6424	16	1.3 (0.7,2.1)	5901	10	1.3 (0.6,2.4)
Comparison	9108	38	2.1 (1.5,2.9)	8253	25	2.2 (1.4,3.2)

1 SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study individuals from their entry year (year of arrival at post for those who were at post, year of arrival at the post of the index employee or year of birth, whichever was later for those who either were not at the post or for whom it could not be determined whether or not at the post) to time of follow-up to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

2 [illegible] the SMR, derived assuming a Poisson distribution for deaths and a fixed number

DMT2C

Table 7.16 Observed and expected number of deaths of dependent children and standardized mortality ratios[3] (SMR)[1] and confidence limits (C.L.)[2] by specified groups of causes[3] and residence status at employee's post[4]

Cause of death (ICDA 7th revision)	Residence status of dependent children at employee's post											
	Lived in						Did not live in or residence status unknown					
	Moscow			Comparison			Moscow			Comparison		
	No. deaths		SMR	No. deaths		SMR	No. deaths		SMR	No. deaths		SMR
	Obs.	Exp.	(95%C.L.)	Obs.	Exp.	(95%C.L.)	Obs.	Exp.	(95%C.L.)	Obs.	Exp.	(95%C.L.)
All causes (001-998)	8	9.7	0.83 (0.4,1.6)	13	19.6	0.66 (0.4,1.1)	26	19.9	1.3 (0.8,1.9)	63	29.6	2.1 (1.6,2.6)
All malignant neoplasms (140-205)	2	0.5	3.8 (0.5,13.7)	1	1.3	0.79 (0.0,4.4)	2	0.83	2.4 (0.3,8.7)	2	1.7	1.2 (0.1,4.3)
Specific malignant neoplasms												
Brain Tumors & other CNS (193)	0	0.1	0 (---)	0	0.2	0 (---)	0	0.2	0 (---)	0	0.2	0 (---)
Leukemia (204)	1	0.2	5.3 (0.1,29.5)	1	0.3	2.9 (0.1,16.2)	1	0.3	3.4 (0.1,18.9)	2	0.4	4.8 (0.6,17.3)
Hodgkin's disease (201)	0	0.0	0 (---)	0	0.1	0 (---)	0	0.1	0 (---)	0	0.1	0 (---)
Respiratory disease (470-527)	0	0.5	0 (---)	0	1.0	0 (---)	1	1.3	0.79 (0.0,4.4)	1	1.7	0.57 (0.0,3.2)
All accidents (800-936)	2	3.0	0.68 (0.1,2.5)	3	5.4	0.56 (0.1,1.6)	3	3.8	0.80 (0.2,2.3)	11	5.6	1.9 (0.9,3.4)
Suicides (936, 970-979)	1	0.29	3.4 (0.0,1.6)	0	0.6	0 (---)	1	0.3	3.3 (0.1,18.4)	0	0.6	0 (---)

[1] SMR computed by using United States mortality experience specific for sex, color, age and calendar time applied to the study individuals from their time of arrival at first study post to time of follow-up to determine the expected number of deaths from all causes; the ratio of observed deaths to expected deaths is the SMR. The SMRs were computed using a computer program supplied by Monson (1).

[2] Ninety-five percent confidence limits on the SMR, derived assuming a Poisson distribution for deaths and a fixed number of person years.

[3] The groups of causes are as defined by Monson (1) using the ICDA 7th Revision.

[4] The experience of males and females have been added together although expected deaths were calculated separately.

Source: TEECOD

DMT3C

Table 7.17 Observed number of deaths and observed to expected ratios[1] by individual causes of death for children of Moscow and Comparison employees

Cause of Death (ICDA 8th revision)	Observed No. of Children Dying from Cause		Observed to Expected Ratio	
	Study Group of Parent		Study Group of Parent	
	Moscow	Comparison	Moscow	Comparison
Total Deaths	36	77	0.82	1.1
Malignant neoplasms (total)	4	3	1.5	0.70
Bone (170)	1	0	2.5	0.0
Unspecified site (199)	1	0	2.5	0.0
Leukemia (205-207)	2	3	1.0	0.98
Infective and parasitic diseases (000-136)	1	2	0.86	1.1
Metabolic diseases (270-279)	0	1	0.0	1.6
Central nervous system (320-333)	1	1	1.3	0.82
Other heart disease (420-429)	0	1	0.0	1.6
Cerebrovascular disease (430-438)	0	2	0.0	1.6
Arteries, arterioles, and capillaries (440-448)	0	1	0.0	1.6
Respiratory system (460-519)	1	1	1.3	0.82
Hernia of abdominal cavity (550-553)	0	1	0.0	1.6
Diseases of liver (573)	0	2	0.0	1.6
Delivery with complications (661)	0	5	0.0	1.6
Congenital anomalies (740-759)	2	6	0.64	1.2
Hydrocephalus	0	1	0.0	1.6
Heart, unspecified	1	1	1.3	0.82
Intestine, other	1	0	2.5	0.0
Urinary system, unspecified	0	1	0.0	1.6
Unspecified anomaly	0	1	0.0	1.6
Sex chromosome abnormality	0	1	0.0	1.6
Multiple anomalies	0	1	0.0	1.6

[1] Observed to Expected Ratios were computed by dividing the observed number of deaths due to a given cause by the expected number for that cause. Expected numbers were computed in this table by assigning the total number for a given cause to each group in proportion to the total person years of observation for that group (PY=20959 for Moscow children and PY=12992 for Comparison children). All deaths were included in this table whether or not complete follow-up information was available. This implicitly assumed that all individuals (living or dead) without complete follow-up information had survival experience similar to those with complete follow-up. Since most individuals had completed follow-up, the

Table 7.17 - continued.

Cause of Death (ICDA 8th revision)	Observed No. of Children Dying from Cause — Study Group of Parent: Moscow	Observed No. of Children Dying from Cause — Study Group of Parent: Comparison	Observed to Expected Ratio — Study Group of Parent: Moscow	Observed to Expected Ratio — Study Group of Parent: Comparison
Certain causes of perinatal morbidity and mortality (760-779)	11	19	0.94	1.0
Ill defined and unknown causes (790-796)	5	10	0.86	1.1
Motor vehicle accidents (E812, E814, E815, E819, E821)	4	6	1.1	0.98
Suicide, Homicide (E950-969)	4	3	1.5	0.70
Other accidents/injuries	3	13	0.48	1.3

SOURCE: ICDADTD

Since the major interest was in those conditions that were first present after the index tour of duty, the number and rate of occurrence of these conditions (per 1,000 person years) and their standardized morbidity ratios are presented in Table 7.18 for the two groups of study posts and two categories of residence status. A total of 44 individual or groups of conditions or diseases were analyzed for the adult dependents.

For only one of these 44 conditions did the standardized morbidity ratio reach statistical significance with a P (probability) value of .007. This was for pneumonia, where the rate was higher (2.9 per 1,000) for those who had definitely lived in the Comparison posts than in Moscow; for those who had not lived in Moscow or whose residency status was unknown, the rate was higher for the Moscow group.

Another approach to these data was to determine for each residence status category, the number of conditions with higher, lower or equal SMBRs For dependents who had definitely resided in the study posts, the ratios were equal in Moscow and the Comparison posts for one condition. There were 23 conditions where the ratios for the Moscow group were higher and 20 in which the Comparison post group had higher morbidity ratios. The 23 conditions where the SMBRs were higher for the Moscow group covered a broad range with varying degrees of difference. However, these conditions are balanced by the 20 conditions in which the morbidity ratios were higher for those who had resided in the Comparison posts, which also covered a wide spectrum. None of these conditions had rates which were statistically significantly different from the adult dependent population as a whole.

It is of interest that for the other status categories of non- or unknown residence, 2 conditions had equal SMBRs for the Moscow and Comparison groups, 22 conditions had higher ratios in the Moscow group

DMB3A

Table 7.18 Number and rate per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] for selected medical conditions (ICDA 8th) first present after index tour as reported in medical records for adult dependents by post

Condition (ICDA 8th)	Condition First Present After Index Tour — Residence Status at Employee's Post: Dependent lived in Moscow (PY=2818) No.	1000PY	Dependent lived in Comparison (PY=6576) No.	1000PY	Dependent did not live in or residence status unknown Moscow (PY=1604) No.	1000PY	Dependent did not live in or residence status unknown Comparison (PY=2092) No.	1000PY	SMBR Compar- Moscow ison (Lived in)		SMBR Compar- Moscow ison (No/unknown)		P-value[2] for statistically significant differences
Amebiasis (006)	5	1.8	16	2.4	6	3.7	4	1.9	0.68	1.0	1.7	0.84	N.S.
Protozoal intestinal disease (007)	4	1.4	5	0.8	2	1.2	1	0.5	1.2	0.78	2.2	0.77	N.S.
Diarrheal disease (009)	21	7.4	36	5.5	7	4.4	9	4.3	1.3	1.0	0.77	0.80	N.S.
Herpes simplex (054)	4	1.4	5	0.8	0	0.0	0	0.0	2.5	1.0	und.	und.	- -
Measles (055)	3	1.1	7	1.1	0	0.0	1	0.5	1.3	1.4	und.	0.49	N.S.
Infectious hepatitis (070)	3	1.1	3	0.5	0	0.0	3	1.4	2.3	0.71	und.	1.7	- -
Mumps (072)	3	1.1	6	0.9	0	0.0	5	2.4	1.4	0.88	und.	1.8	N.S.
Dermatophytosis (110)	4	1.4	4	0.6	4	2.5	3	1.4	1.3	0.52	2.1	1.3	N.S.
Helminthiasis (120-129)	2	0.7	8	1.2	2	1.2	4	1.9	0.55	1.0	1.1	1.5	N.S.
Malignant skin neoplasms (173)	2	0.7	4	0.6	0	0.0	0	0.0	1.8	1.3	und.	und.	- -
Malignant neoplasms, except skin (140-209)	8	2.8	11	1.7	1	0.6	5	2.4	1.5	0.80	0.44	1.4	N.S.
Benign neoplasms (210-238)	59	20.9	129	19.6	29	18.1	33	15.8	1.0	1.0	1.0	0.89	N.S.
Diabetes mellitus (250)	3	1.1	5	0.8	0	0.0	4	1.9	0.98	0.91	und.	2.3	N.S.
Obesity (nonendocrine)(277)	14	5.0	51	7.8	12	7.5	9	4.3	0.76	1.1	1.2	0.66	N.S.
Blood diseases (280-289)	19	6.7	46	7.0	11	6.9	9	4.3	0.93	1.1	1.0	0.71	N.S.
Neuroses, personality disorders (300-309)	25	8.9	62	9.4	11	6.9	14	6.7	0.98	1.1	0.83	0.77	N.S.
Migraine (346)	4	1.4	8	1.2	5	3.1	2	1.0	0.91	0.85	2.2	0.67	N.S.
Diseases of nerves and peripheral ganglion (350-358)	8	2.8	16	2.4	2	1.2	4	1.9	1.1	1.0	0.63	1.0	N.S.
Inflammatory eye diseases (360-369)	5	1.8	13	2.0	6	3.7	4	1.9	0.77	0.89	1.9	1.0	N.S.

[1] Standardized Morbidity Ratio of condition rate for each residence status study group to population condition rate adjusted for year of entry and age at entry; und. = undefined.

[2] N.S. = Not Significant, P-value greater than .05, - - = Statistical test not done (10 or less total events)

Table 7.18 - continued

Condition (ICDA 8th)	Condition First Present After Index Tour: Residence Status at Employee's Post: Dependent lived in: Moscow (PY=2818) No.	1000PY	Comparison (PY=6576) No.	1000PY	Dependent did not live in or residence status unknown: Moscow (PY=1604) No.	1000PY	Comparison (PY=2092) No.	1000PY	SMRR: Moscow (Lived in)	Comparison	Moscow (No/unknown)	Comparison	P-value[2] for statistically significant differences
Eye, refractive error (370)	56	19.9	99	15.1	16	10.0	27	12.9	1.3	0.96	0.71	0.86	N.S.
Eye, other conditions (371-379)	8	2.8	29	4.4	6	3.7	8	3.8	0.76	1.1	1.1	1.0	N.S.
Diseases of ear and mastoid process(380-389)	12	4.3	37	5.6	9	5.6	12	5.7	0.82	1.0	1.2	1.1	N.S.
Hypertensive disease (400-404)	12	4.3	33	5.0	9	5.6	10	4.8	0.82	0.96	1.5	1.1	N.S.
Ischemic heart disease (410-414)	4	1.4	14	2.1	1	0.6	3	1.4	0.89	1.2	0.43	0.85	N.S.
Other forms of heart disease (420-429)	21	7.5	58	8.8	9	5.6	12	5.7	0.89	1.1	0.79	0.85	N.S.
Diseases of arteries, arterioles, capillaries (440-448)	5	1.8	13	2.0	1	0.6	6	2.9	0.93	0.94	0.40	1.8	N.S.
Diseases of veins, lymphatics (450-458)	60	21.3	120	18.2	27	16.8	38	18.2	1.2	0.96	0.95	0.96	N.S.
Acute respiratory infections except influenza (460-466)	24	8.5	34	5.2	9	5.6	12	5.7	1.3	0.90	0.92	0.98	N.S.
Influenza (470-474)	5	1.8	14	2.1	1	0.6	3	1.4	1.2	1.3	0.27	0.71	N.S.
Pneumonia (480-486)	5	1.8	19	2.9	6	3.7	0	0.0	0.77	1.3	1.3	und.	0.007
Bronchitis, emphysema, asthma (490-493)	16	5.7	40	6.1	10	6.2	7	3.3	1.0	1.1	1.2	0.55	N.S.
Other diseases of respiratory tract (500-508)	52	18.5	72	10.9	18	11.2	23	11.0	1.4	0.90	0.87	0.88	N.S.
Other diseases of respiratory system (510-519	18	6.4	24	3.6	5	3.1	9	4.3	1.5	0.84	0.80	1.0	N.S.

Table 7.18 - continued

Condition (ICDA 8th)	Condition First Present After Index Tour: Residence Status at Employee's Post: Dependent lived in: Moscow (PY=2818) No.	Moscow (PY=2818) 1000PY	Comparison (PY=6576) No.	Comparison (PY=6576) 1000PY	Dependent did not live in or residence status unknown: Moscow (PY=1604) No.	Moscow (PY=1604) 1000PY	Comparison (PY=2092) No.	Comparison (PY=2092) 1000PY	SMRR: Moscow (Lived in)	Comparison (Lived in)	Moscow (No/unknown)	Comparison (No/unknown)	P-value[2] for statistically significant differences
Diseases of esophagus, stomach & duodenum (530-537)	20	7.1	30	4.6	8	5.0	10	4.8	1.3	0.84	1.1	1.0	N.S.
Hernia of abdominal cavity (550-553)	10	3.5	16	2.4	2	1.2	2	1.0	1.6	1.0	0.57	0.44	N.S
Other diseases of intestine and peritoneum (560-569)	29	10.3	48	7.3	10	6.2	15	7.2	1.3	0.91	0.89	0.96	N.S.
Diseases of liver, gall bladder, pancreas (570-577)	11	3.9	15	2.3	3	1.9	4	1.9	1.6	0.94	0.65	0.70	N.S.
Diseases of genitourinary system (580-629)	163	57.8	312	47.4	59	36.8	74	35.4	1.1	1.0	0.88	0.86	N.S.
Complications of pregnancy, childbirth & puerperium (630-678)	15	5.3	34	5.2	9	5.6	7	3.3	0.99	1.1	1.0	0.68	N.S.
Diseases of skin and subcutaneous tissue (680-709)	65	23.1	107	16.3	20	12.5	28	13.4	1.3	0.97	0.78	0.88	N.S.
Diseases of musculoskeletal system & connective tissue (710-738)	68	24.1	165	25.1	21	13.1	45	21.5	1.0	1.1	0.61	0.99	N.S.
Nervousness & debility(790)	16	5.7	49	7.5	11	6.9	9	4.3	0.80	1.1	1.2	0.69	N.S.
Accidents, poisonings, violence (800-999)	55	19.5	118	17.9	29	18.1	36	17.2	1.1	0.98	1.0	0.97	N.S.
Accidents, external cause (E800-E999)	8	2.8	32	4.9	9	5.6	8	3.8	0.73	1.1	1.2	0.81	N.S.

and 20 had higher ratios in the Comparison group. Obviously, equality of observed rates of occurrence would not be expected; chance alone would result in differences, but they should be randomly distributed, which they appear to be.

Further analysis along these lines was carried out. Each group was compared with the other groups to determine whether the SMBRs for each condition were higher or lower. The four groups were designated as follows:

A = Definitely lived in Moscow

B = Definitely lived in Comparison posts

C = Did not live in or residence status unknown for dependents of Moscow employees

D = Did not live in or residence status unknown for dependents of Comparison post employees

The comparisons of interest for selected study groups had the following results:

Comparison			Number of conditions		
1st group		2nd group	With higher SMBRs in 1st group	With lower SMBRs in 1st group	With equal SMBRs
A	vs	B	23	20	1
C	vs	D	22	20	2
A	vs	C	27	16	1
A	vs	D	33	10	1
B	vs	D	27	15	2

Thus, those who lived in Moscow had more conditions with higher morbidity ratios than the other groups, particularly compared to those who had not lived in any of these posts. However, those who had lived in the Comparison posts also had more conditions with higher ratios than those who had not lived in Comparison posts or whose residency was unknown (B vs D).

These findings indicate that the major emphasis should be placed on the comparison between those who had definitely lived in Moscow and in the Comparison posts. In addition, it is also noteworthy that none of the groups are statistically significantly different with respect to the frequency of occurrence of any of these conditions.

For the sake of completeness, Table 7.19 presents the number and percent of medical conditions found on the medical record that were ever present among the adult dependents in the four Comparison groups. Rates were not computed for these conditions since they included conditions that had been present before the individual had lived in or the employee had been assigned to the index post as well as conditions that first appeared after the index tour. The similarities between these four groups are numerous.

Another approach was to assess the health status of the adult dependents, based on information derived from abstracts of their medical records, by compiling the 20 most frequent medical conditions occurring after the index tour in Moscow. The rank order for occurrence of the same conditions within the Comparison group was determined and the rates of occurrence were calculated for both groups (Table 7.20). The rankings were done separately for the Moscow and Comparison groups who were known to have lived at the post and for the group whose residence status was unknown or had not lived at the post. The most frequent health problems were shared to a great degree by both Moscow and Comparison groups, especially among those adult dependents who resided at the post. It is of interest that for this latter group, in 18 of the 20 listed conditions the rate of occurrence was higher in the Moscow group. This is indicative of an overall increase in general health problems in the Moscow group, at least insofar as these conditions were reported on medical records. There was no similar

DMB4A

Table 7.19 Number and percent of selected medical conditions (ICDA 8th) as reported in medical records which were ever present among adult dependents by post

Condition (ICDA 8th)	Condition ever present among adult dependents							
	Residence status at employee's post							
	Dependent lived in Moscow (N=286)		Comparison (N=579)		Dependent did not live in or residence status unknown: Moscow (N=112)		Comparison (N=165)	
	No.	%	No.	%	No.	%	No.	%
Amebiasis (006)	17	6%	44	8%	7	6%	6	4%
Protozoal intestinal disease (007)	7	2%	5	1%	2	2%	1	1%
Diarrheal disease (009)	32	11%	60	10%	8	7%	13	8%
Herpes simplex (054)	5	2%	6	1%	0	0%	0	0%
Measles (055)	22	8%	50	9%	8	7%	12	7%
Infectious hepatitis (070)	4	1%	10	2%	3	3%	6	4%
Mumps (072)	31	11%	71	12%	6	5%	20	12%
Dermatophytosis (110)	9	3%	8	1%	4	4%	4	2%
Helminthiasis (120-129)	8	3%	14	2%	3	3%	4	2%
Malignant skin neoplasms (173)	3	1%	8	1%	1	1%	1	1%
Malignant neoplasms, exc. skin (140-209)	10	3%	13	2%	1	1%	6	4%
Benign neoplasms (210-238)	96	34%	195	34%	34	30%	47	28%
Diabetes mellitus (250)	3	1%	8	1%	3	3%	5	3%
Obesity, non-endocrine (277)	24	8%	73	13%	16	14%	11	7%
Blood diseases (280-289)	32	11%	68	12%	14	13%	13	8%
Neuroses, personality disorders (300-309)	35	12%	82	14%	16	14%	16	10%
Migraine (346)	10	3%	18	3%	5	4%	4	2%
Diseases of nerves and peripheral ganglion (350-358)	9	3%	19	3%	3	3%	4	2%
Inflammatory eye diseases (360-369)	12	4%	23	4%	6	5%	4	2%
Eye, refractive error (370)	100	35%	165	28%	27	24%	37	22%
Eye, other conditions (371-379)	10	3%	40	7%	6	5%	11	7%
Diseases of ear and mastoid (380-389)	21	7%	60	10%	11	10%	15	9%
Hypertensive disease (400-404)	19	7%	47	8%	13	12%	13	8%
Ischemic heart disease (410-414)	5	2%	15	3%	1	1%	3	2%
Other forms of heart disease (420-429)	32	11%	72	12%	13	12%	14	8%
Diseases of arteries, arterioles, capillaries (440-448)	6	2%	19	3%	2	2%	6	4%

Source: MAMB7DD

Table 7.19 - continued

Condition (ICDA 8th)	Condition ever present among adult dependents: Residence status at employee's post — Dependent lived in: Moscow (N=286) No.	%	Comparison (N=579) No.	%	Dependent did not live in or residence status unknown: Moscow (N=112) No.	%	Comparison (N=165) No.	%
Diseases of veins, lymphatics(450-458)	94	33%	191	33%	35	31%	51	31%
Acute respiratory infections except influenza (460-466)	42	15%	61	11%	11	10%	18	11%
Influenza (470-474)	11	4%	31	5%	3	3%	4	2%
Pneumonia (480-486)	14	5%	28	5%	7	6%	1	1%
Bronchitis, emphysema, asthma(490-493)	30	10%	57	10%	12	11%	8	5%
Other diseases of upper respiratory tract (500-508)	80	28%	126	22%	25	22%	32	19%
Other diseases of respiratory system (510-519)	23	8%	41	7%	7	6%	11	7%
Diseases of esophogus, stomach and duodenum (530-537)	31	11%	54	9%	9	8%	13	8%
Hernia of abdominal cavity (550-553)	14	5%	19	3%	3	3%	3	2%
Other disease of intestine and peritoneum (560-569)	40	14%	74	13%	12	11%	20	12%
Diseases of liver, gallbladder, pancreas (570-577)	17	6%	21	4%	5	4%	6	4%
Diseases of genitourinary system (580-629)	217	76%	432	75%	69	62%	98	59%
Complications of pregnancy, child-birth, and puerperium (630-678)	38	13%	72	12%	12	11%	9	5%
Diseases of skin and subcutaneous tissue (680-709)	92	32%	162	28%	24	21%	44	27%
Diseases of musculoskeletal system, and connective tissue (710-738)	90	31%	204	35%	28	25%	54	33%
Nervousness and debility (790)	31	11%	73	13%	12	11%	15	9%
Accidents, poisoning and violence (800-999)	104	36%	191	33%	39	35%	49	30%
Accidents, external cause (E800-E999)	17	6%	51	9%	12	11%	12	7%

Source: MAHB7DD

DMBSA

Table 7.20 Number and rate of occurrence per 1000 person years (PY) of the 20 most frequent medical conditions (ICDA 8th) in the Moscow adult dependents as reported on the Medical Abstracts and the corresponding rank order and rate of occurrence for Comparison adult dependents conditions first present after tour at index post by residence status at post

Condition (ICDA 8th)	Rank Order: Lived in Moscow	Rank Order: Lived in Comparison	Frequency[1] and Rate of Occurrence per 1000PY: Lived in Moscow (PY=2818) Frequency	Moscow (PY=2818) Rate	Comparison (PY=6576) Frequency	Comparison (PY=6576) Rate
Disorders of menstruation (626)	1	1	85	30.2	159	24.2
Refractive errors (370)	2	2	65	23.1	107	16.3
Infective diseases of cervix uteri (620)	3	4	50	17.7	85	12.9
Symptoms referable to limbs & joints(787)	4	3	44	15.6	88	13.4
Other diseases of cervix (621)	5	5	36	12.8	83	12.6
Chronic cystic disease of breast (610)	6	9	35	12.4	55	8.4
Hemorrhoids (455)	7	6	32	11.4	67	10.2
Benign tumors of uterus (218 & 219) (includes 43 uterine fibromas (218))	7	7	32	11.4	65	9.9
Symptoms referable to abdomen and lower G.I. tract (785)	9	15	27	9.6	46	7.0
Vertebrogenic pain syndrome (728)	9	9	27	9.6	55	8.4
Hay fever (507)	11	24	26	9.2	34	5.2
Symptoms referable to genitourinary system (786)	11	21	26	9.2	38	5.8
Other eczema and dermatitis (692)	13	22	25	8.9	37	5.6
Malposition of uterus (624)	14	12	23	8.2	49	7.5
Symptoms referable to respiratory system (783)	15	16	21	7.5	44	6.7
Symptoms referable to cardiovascular and lymphatic system (782)	15	20	21	7.5	39	5.9
Symptomatic heart disease (427) and tachycardia (782.2)	15	13	21	7.5	48	7.3
Diarrheal disease (009)(unspecified organism)	15	18	21	7.5	42	6.4
Bronchitis, emphysema, asthma(490-493)	19	14	20	7.1	47	7.1
Diseases of blood and blood forming organs (280-289)	19	11	20	7.1	52	7.9

[1]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

Source: MACHID

Table 7.20 – Continued

Condition (ICDA 8th)	Rank Order: Did not live in or residence status unknown — Moscow	Rank Order: Did not live in or residence status unknown — Comparison	Frequency[1] and Rate of Occurrence per 1000PY: Did not live in or residence status unknown — Moscow (PY=1604) Frequency	Moscow (PY=1604) Rate	Comparison (PY=2092) Frequency	Comparison (PY=2092) Rate
Disorders of menstruation (626)	1	1	30	18.7	53	25.3
Benign tumors of uterus (218 & 219) (includes uterine fibroma 14 (218))	2	6	25	15.6	23	11.0
Refractive errors (370)	3	3	23	14.3	40	19.1
Hemorrhoids (455)	4	4	20	12.5	31	14.8
Symptoms referable to cardiovascular and lymphatic system (782)	5	9	17	10.6	20	9.6
Diseases of the blood and blood forming organs (280-289)	6	21	15	9.4	12	5.7
Nervousness and debility (790)	6	23	15	9.4	11	5.3
Malposition of uterus (624)	8	25	14	8.7	8	3.8
Vertebrogenic pain syndrome (728)	9	14	13	8.1	15	7.2
Obesity (277)	10	19	12	7.5	12	5.7
Symptoms referable to respiratory system (783)(minus pain in chest)	11	14	11	6.9	15	7.2
Bronchitis, emphysema, asthma (490-493)	11	25	11	6.9	9	4.3
Other diseases of cervix (621)	13	8	10	6.2	21	10.0
Varicose veins of lower extremities (454)	13	11	10	6.2	17	8.1
Symptoms referable to genitourinary system (786)	13	24	10	6.2	10	4.8
Hay fever (507)	13	21	10	6.2	12	5.7
Symptomatic heart disease (427) and tachycardia (782.2)	13	14	10	6.2	15	7.2
Hypertension (benign) (401)	18	11	9	5.6	17	8.1
Diarrheal disease (009) (unspecified organism)	18	18	9	5.6	13	6.2
Cystitis (595)	18	18	9	5.6	13	6.2

[1]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

Source: MAMBID

pattern for the groups (Moscow and Comparison) of adult dependents who were not known to have lived at the post.

Dependent Children

Table 7.21 presents the comparison of the rates of occurrence of medical conditions that were first present after the index tour and standardized morbidity ratios for dependent children at the two study posts, classified by residence status of the children. Of all the 44 individual or groups of conditions, only five were found to be statistically significantly different for one of the study posts as compared to the total group. Among these five, the highest SMBR was found among those who had lived in Moscow for two conditions (mumps and blood diseases - almost all anemias) and for the three others (other heart disease, acute respiratory infections, and musculoskeletal-connective tissue diseases) the highest ratio was for those who had not lived in Moscow or whose residence status was unknown.

Applying the same procedure used for adult dependents, the four study posts were compared for the number of conditions which were higher in 5 pairwise comparisons. The four study groups were designated as follows:

A = Definitely lived in Moscow

B = Definitely lived in Comparison post

C = Did not live or residence status unknown for dependents of Moscow employees

D = Did not live in or residence status unknown for dependent children of Comparison post employees

DMB3C

Table 7.21 Number and rate per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] for selected medical conditions (ICDA 8th) first present after index tour as reported in medical records for dependent children by post

Condition (ICDA 8th)	Condition First Present After Index Tour — Residence Status at Employee's Post: Dependent lived in — Moscow (PY=5538) No.	Moscow (PY=5538) Rate per 1000 PY	Dependent lived in — Comparison (PY=10460) No.	Comparison (PY=10460) Rate per 1000 PY	Dependent did not live in or residence status unknown — Moscow (PY=4334) No.	Moscow (PY=4334) Rate per 1000 PY	Dependent did not live in or residence status unknown — Comparison (PY=5410) No.	Comparison (PY=5410) Rate per 1000 PY	SMBR — Moscow (Lived in)	SMBR — Comparison (Lived in)	SMBR — Moscow (No/unknown)	SMBR — Comparison (No/unknown)	P-value[2] for statistically significant differences
Amebiasis (006)	3	0.5	15	1.4	4	0.9	5	0.9	0.59	1.3	0.87	0.85	N.S.
Protozoal intestinal disease (007)	2	0.4	3	0.3	3	0.7	2	0.4	1.1	0.84	1.5	0.78	- -
Diarrheal disease (009)	9	1.6	18	1.7	18	4.2	15	2.8	0.74	0.76	1.7	1.1	N.S.
Herpes simplex (054)	2	0.4	2	0.2	1	0.2	0	0.0	2.1	0.93	1.3	und.	- -
Measles (055)	18	3.3	32	3.1	11	2.5	12	2.2	1.2	1.0	0.94	0.80	N.S.
Infectious hepatitis (070)	0	0.0	2	0.2	0	0.0	0	0.0	und.	2.5	und.	und.	- -
Mumps (072)	26	4.7	23	2.2	13	3.0	9	1.7	1.8	0.77	1.1	0.60	0.006
Dermatophytosis (110)	6	1.1	9	0.9	3	0.7	2	0.4	1.4	1.0	0.98	0.51	N.S.
Helminthiasis (120-129)	11	2.0	12	1.1	8	1.8	10	1.8	1.4	0.73	1.1	1.1	N.S.
Malignant skin neoplasms (173)	0	0.0	0	0.0	0	0.0	0	0.0	und.	und.	und.	und.	- -
Malignant neoplasms, except skin (140-209)	1	0.2	1	0.1	0	0.0	2	0.4	1.4	0.58	und.	2.3	- -
Benign neoplasms (210-238)	11	2.0	18	1.7	10	2.3	11	2.0	0.90	0.88	1.3	1.1	N.S.
Diabetes mellitus (250)	0	0.0	0	0.0	0	0.0	0	0.0	und.	und.	und.	und.	- -
Obesity (nonendocrine) (277)	13	2.3	26	2.5	13	3.0	17	3.1	0.81	0.90	1.2	1.3	N.S.
Blood diseases (280-289)	19	3.4	14	1.3	7	1.6	11	2.0	1.8	0.70	0.79	0.93	0.05
Neuroses, personality disorders (300-309)	9	1.6	33	3.2	10	2.3	14	2.6	0.64	1.2	0.91	1.0	N.S.
Migraine (346)	1	0.2	2	0.2	1	0.2	0	0.0	1.5	1.2	1.4	und.	- -
Diseases of nerves and peripheral ganglion (350-358)	1	0.2	1	0.1	1	0.2	0	0.0	1.5	0.83	2.0	und.	- -
Inflammatory eye diseases (360-369)	12	2.2	17	1.6	4	0.9	13	2.4	1.2	0.92	0.53	1.3	- -

[1] Standardized Mortality Ratio of condition rate for each residence status study group to population condition rate adjusted for year of entry and age at entry; und. = undefined.

[2] N.S. = Not Significant, P-value greater than .05, - - = Statistical test not done (10 or less observed events)

Table 7.21 - Continued

Condition (ICDA 8th)	Condition First Present After Index Tour — Residence Status at Employee's Post: Dependent lived in Moscow (PY=5538) No.	Rate per 1000 PY	Dependent lived in Comparison (PY=10460) No.	Rate per 1000 PY	Dependent did not live in or residence status unknown Moscow (PY=4334) No.	Rate per 1000 PY	Dependent did not live in or residence status unknown Comparison (PY=5410) No.	Rate per 1000 PY	SMBR Compar- Moscow ison (Lived in)		SMBR Compar- Moscow ison (No/unknown)		P-value[2] for statistically significant differences
Eye, refractive error (370)	61	11.0	108	10.3	37	8.5	41	7.6	1.1	1.0	0.97	0.86	N.S.
Eye, other conditions (371-379)	12	2.2	24	2.3	11	2.5	9	1.7	1.1	1.1	1.1	0.69	N.S.
Diseases of ear and mastoid process (380-389)	30	5.4	56	5.4	38	8.8	39	7.2	0.89	0.88	1.3	1.1	N.S.
Hypertensive disease (400-404)	0	0.0	1	0.1	2	0.5	1	0.2	und.	0.29	20.5	8.0	- -
Ischemic heart disease (410-414)	0	0.0	0	0.0	0	0.0	1	0.2	und.	und.	und.	5.4	- -
Other forms of heart disease (420-429)	19	3.4	15	1.4	17	3.9	10	1.8	1.4	0.62	1.6	0.79	0.02
Diseases of arteries, arterioles, capillaries (440-448)	0	0.0	0	0.0	0	0.0	0	0.0	und.	und.	und.	und.	- -
Diseases of veins, lymphatics (450-458)	5	0.9	12	1.1	7	1.6	4	0.7	0.89	1.0	1.8	0.60	N.S.
Acute respiratory infections except influenza (460-466)	46	8.3	51	4.9	44	10.2	43	7.9	1.2	0.72	1.3	1.1	0.02
Influenza (470-474)	5	0.9	13	1.2	1	0.2	4	0.7	0.94	1.5	0.28	0.74	N.S.
Pneumonia (480-486)	7	1.3	15	1.4	6	1.4	11	2.0	0.72	0.99	0.95	1.4	N.S.
Bronchitis, emphysema, asthma (490-493)	15	2.7	34	3.3	9	2.1	19	3.5	0.88	1.1	0.69	1.2	N.S.
Other diseases of respiratory tract (500-508)	51	9.2	102	9.8	42	9.7	48	8.9	0.94	1.0	1.0	0.95	N.S.
Other diseases of respiratory system (510-519)	5	0.9	8	0.8	7	1.6	8	1.5	0.82	0.70	1.6	1.3	N.S.

Table 7.21 - Continued

Condition (ICDA 8th)	Condition First Present After Index Tour — Residence Status at Employee's Post: Dependent lived in Moscow (PY=5538) No.	Rate per 1000 PY	Dependent lived in Comparison (PY=10460) No.	Rate per 1000 PY	Dependent did not live in or residence status unknown Moscow (PY=4334) No.	Rate per 1000 PY	Dependent did not live in or residence status unknown Comparison (PY=5410) No.	Rate per 1000 PY	SMRR Moscow / Comparison (Lived in)		SMRR Moscow / Comparison (No/unknown)		P-value[2] for statistically significant differences
Diseases of esophagus, stomach & duodenum (530-537)	5	0.9	13	1.2	4	0.9	6	1.1	0.86	1.1	0.86	1.0	N.S.
Hernia of abdominal cavity (550-553)	9	1.6	8	0.8	6	1.4	4	0.7	2.1	0.92	1.4	0.40	N.S.
Other diseases of intestine and peritoneum(560-569)	3	0.5	10	1.0	3	0.7	6	1.1	0.67	1.1	0.85	1.2	N.S.
Diseases of liver, gall bladder, pancreas (570-577)	2	0.4	7	0.7	4	0.9	2	0.4	0.45	1.3	1.8	0.70	N.S.
Diseases of genitourinary system (580-629)	39	7.0	80	7.6	23	5.3	23	4.3	1.1	1.2	0.90	0.64	N.S.
Complications of pregnancy, childbirth & puerperium (630-678)	0	0.0	1	0.1	1	0.2	0	0.0	und.	0.54	50.7	und.	- -
Diseases of skin and subcutaneous tissue (680-709)	63	11.4	87	8.3	51	11.8	53	9.8	1.2	0.85	1.2	0.97	N.S.
Diseases of musculoskeletal system & connective tissue (710-738)	23	4.2	66	6.3	15	3.5	17	3.1	0.96	1.3	0.78	0.60	.02
Nervousness & debility (790)	4	0.7	20	1.9	4	0.9	5	0.9	0.63	1.3	0.87	0.76	N.S.
Accidents, poisonings, violence (800-999)	73	13.2	108	10.3	41	9.5	49	9.1	1.2	0.97	0.93	0.87	N.S.
Accidents, external cause (E800-E999)	23	4.2	41	3.9	13	3.0	19	3.5	1.1	1.1	0.84	0.94	N.S.

The comparisons of the rates for each study group had the following results:

Comparison			Number of conditions		
1st group		2nd group	With higher SMBRs in 1st group	With lower SMBRs in 1st group	With equal SMBRs
A	vs	B	20	18	6
C	vs	D	27	12	5
A	vs	C	17	19	8
A	vs	D	22	17	5
B	vs	D	24	17	3

The dependent children who had definitely lived in Moscow had more conditions with higher SMBRs in two out of three comparisons; however these differences were minimal. The D group (Comparison post dependents who did not live in or whose residency status at post was unknown) also had a smaller number of conditions with higher SMBRs than did the B and C groups.

These data, together with the presence of statistically significant differences for only 5 out of the 44 conditions among the four groups, indicate that the dependent children who lived in Moscow were quite similar to 2 of the other groups with respect to the frequency of occurrence of medical conditions and, perhaps, slightly better off than the third.

Table 7.22 presents the number and percent of medical conditions that were ever present among dependent children in the four comparison groups. Included are conditions that had been present before the index tour as well as those that first occurred after the index tour. The similarity of frequencies in these groups is the noteworthy feature.

The 20 more frequent diseases or conditions in children which occurred for the first time after arrival of parent or parents at the index post in Moscow were compiled along with the rank order frequency of the conditions in Comparison children. The compilations were done independently

DMB4C

Table 7.22 Number and percent of selected medical conditions (ICDA 8th) as reported in medical records which were ever present among dependent children by post

Condition (ICDA 8th)	Condition ever present among dependent children							
	Residence status at employee's post							
	Dependent lived in				Dependent did not live in or residence status unknown			
	Moscow (N=534)		Comparison (N=893)		Moscow (N=389)		Comparison (N=527)	
	No.	%	No.	%	No.	%	No.	%
Amebiasis (006)	10	2%	20	2%	6	2%	6	1%
Protozoal intestinal disease (007)	3	1%	4	<1%	3	1%	2	<1%
Diarrheal disease (009)	25	5%	34	4%	20	5%	21	4%
Herpes simplex (054)	2	<1%	3	<1%	1	<1%	1	<1%
Measles (055)	49	9%	68	8%	14	4%	32	6%
Infectious hepatitis (070)	0	0%	6	1%	0	0%	2	<1%
Mumps (072)	50	9%	48	5%	21	5%	17	3%
Dermatophytosis (110)	9	2%	11	1%	3	1%	3	1%
Helminthiasis (120-129)	13	2%	18	2%	11	3%	12	2%
Malignant skin neoplasms (173)	0	0%	0	0%	0	0%	0	0%
Malignant neoplasms,exc.skin(140-209)	1	<1%	1	<1%	0	0%	2	<1%
Benign neoplasms (210-238)	20	4%	31	3%	11	3%	14	3%
Diabetes mellitus (250)	1	<1%	0	0%	1	<1%	0	0%
Obesity, non-endocrine (277)	15	3%	32	4%	14	4%	21	4%
Blood diseases (280-289)	26	5%	19	2%	11	3%	14	3%
Neuroses, personality disorders (300-309)	13	2%	38	4%	12	3%	19	4%
Migraine (346)	3	1%	2	<1%	1	<1%	0	0%
Diseases of nerves and peripheral ganglion (350-358)	2	<1%	3	<1%	1	<1%	0	0%
Inflammatory eye diseases (360-369)	15	3%	24	3%	8	2%	18	3%
Eye,refractive error (370)	73	14%	124	14%	48	12%	53	10%
Eye,other conditions (371-379)	19	4%	35	4%	16	4%	14	3%
Diseases of ear and mastoid (380-389)	62	12%	91	10%	52	13%	46	9%
Hypertensive disease (400-404)	0	0%	1	<1%	2	1%	2	<1%
Ischemic heart disease (410-414)	0	0%	0	0%	0	0%	1	<1%
Other forms of heart disease (420-429)	21	4%	20	2%	21	5%	13	2%
Diseases of arteries, arterioles, capillaries (440-448)	0	0%	2	<1%	0	0%	0	0%

Source: MAHB7DD

Table 7.22 - continued

Condition (ICDA 8th)	Condition ever present among dependent children							
	Residence status at employee's post							
	Dependent lived in				Dependent did not live in or residence status unknown			
	Moscow (N=534)		Comparison (N=893)		Moscow (N=389)		Comparison (N=527)	
	No.	%	No.	%	No.	%	No.	%
Diseases of veins, lymphatics (450-458)	7	1%	14	2%	11	3%	8	2%
Acute respiratory infections except influenza (460-466)	68	13%	87	10%	49	13%	61	12%
Influenza (470-474)	11	2%	16	2%	3	1%	6	1%
Pneumonia (480-486)	13	2%	25	3%	8	2%	13	2%
Bronchitis, emphysema, asthma(490-493)	27	5%	55	6%	11	3%	26	5%
Other diseases of upper respiratory tract (500-508)	69	13%	142	16%	53	14%	63	12%
Other diseases of respiratory system (510-519)	7	1%	13	1%	7	2%	8	2%
Diseases of esophogus, stomach and duodenum (530-537)	8	1%	15	2%	5	1%	10	2%
Hernia of abdominal cavity (550-553)	13	2%	19	2%	9	2%	9	2%
Other diseases of intestine and peritoneum (560-569)	5	1%	18	2%	4	1%	7	1%
Diseases of liver, gallbladder, pancreas (570-577)	2	<1%	10	1%	7	2%	4	1%
Diseases of genitourinary system (580-629)	48	9%	97	11%	26	7%	31	6%
Complications of pregnancy, childbirth, and puerperium (630-678)	1	<1%	1	<1%	1	<1%	1	<1%
Diseases of skin and subcutaneous tissue (680-709)	92	17%	129	14%	62	16%	66	13%
Diseases of musculoskeletal system, and connective tissue (710-738)	28	5%	88	10%	21	5%	21	4%
Nervousness and debility (790)	5	1%	22	2%	5	1%	9	2%
Accidents, poisoning and violence (800-999)	104	19%	162	18%	49	13%	64	12%
Accidents, external cause (E800-E999)	34	6%	53	6%	16	4%	21	4%

Source: MV1B700

for children who had lived with their parents at the post and those who did not or whose residence status at the post was unknown (Table 7.23). For the former group of children, many health conditions are shared in common with similar rank orders. However, for the children who lived in Moscow, mumps, blood diseases (anemia), and sebaceous gland conditions were much more common problems than they were in Comparison children who lived at the post. It is of interest to note that the occurrence rates for 12 out of the 21 listed conditions were higher in the Moscow children. The group of children who were not known to have lived at the post, were very similar both in agreement in rank order of the most frequent health conditions and in rates of occurrence--9 of the 20 rates were higher in the Moscow group.

The other source of the morbidity experience on dependent children was the Health History Questionnaire of the index employee. In view of the relatively low response rate (52% for the Moscow group and 38% for the Comparison group) for the Health History Questionnaires, caution must be exercised in evaluating this information and in deriving inferences. Table 7.24 presents information on the rate per 1,000 person years for dependent children of conditions reported on the Health History Questionnaire returned by their families. The information on morbidity was limited to those conditions that occurred either during or after the employee's tour of duty, depending upon when the child was born; if born before the index tour, the morbidity experience was limited to the time period starting with the employee's index tour or when the child was born, if after the tour of duty. Comparisons were made of the morbidity rates for dependent children of employees who had served at Moscow or at the Comparison posts. In contrast to the other tables presented thus far, no distinction was made between children who were or were not in residence at the post.

DMB5C

Table 7.23 Number and rate of occurrence per 1000 person years (PY) of the 20 most frequent medical conditions (ICDA 8th) in the Moscow dependent children as reported on the Medical Abstracts and the corresponding rank order and rate of occurrence for Comparison dependent children conditions first present after tour at index post by residence status at post

Condition (ICDA 8th)	Rank Order		Frequency[1] and Rate of Occurrence per 1000PY			
	Lived in		Lived in			
	Moscow	Comparison	Moscow (PY=5538)		Comparison (PY=10460)	
			Frequency	Rate	Frequency	Rate
Refractive error (370)	1	1	68	12.3	124	11.9
Acute respiratory infections, except influenza (460-466)	2	4	57	10.3	62	5.9
Diseases of ear & mastoid process (380-389)	3	2	42	7.6	76	7.3
Mumps (072)	4	18	27	4.9	24	2.3
Hay fever (507)	5	5	24	4.3	51	4.9
Other eczema, dermatitis (692)	6	9	23	4.2	42	4.0
Diseases of blood and blood forming organs (280-289)	7	27	21	3.8	17	1.6
Operations on pharynx, tonsils, adenoids (21)	8	3	20	3.6	68	6.5
Disorders of menstruation (626)	8	11	20	3.6	39	3.7
Diseases of sebaceous glands (706)	10	37	19	3.4	10	1.0
Other diseases and conditions of eye (371-379)	10	13	19	3.4	31	3.0
Measles (055)	12	12	18	3.3	34	3.3
Hypertrophy, tonsils, adenoids (500)	12	6	18	3.3	47	4.5
Other diseases of urinary system (590-599)	14	8	17	3.1	43	4.1
Bronchitis, emphysema, asthma (490-493)	15	10	16	2.9	40	3.8
Obesity not specified as endocrine origin (277)	16	15	14	2.5	27	2.6
Chicken pox (052)	17	14	13	2.3	30	2.9
Chronic diseases endocardium (424.9)	17	36	13	2.3	11	1.1
Infectious mononucleosis (075)	19	38	12	2.2	9	0.9
Viral warts (079.1)	19	24	12	2.2	18	1.7
Symptoms referable to limbs & joints (787)	19	19	12	2.2	22	2.1

[1]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

Source: MAMBID

Table 7.23 - Continued

Condition (ICDA 8th)	Rank Order: Did not live in or residence status unknown — Moscow	Rank Order: Did not live in or residence status unknown — Comparison	Frequency[1] and Rate of Occurrence per 1000PY: Did not live in or residence status unknown — Moscow (PY=4334) Frequency	Moscow (PY=4334) Rate	Comparison (PY=5410) Frequency	Comparison (PY=5410) Rate
Acute respiratory infection, except influenza (460-466)	1	1	59	13.6	60	11.1
Diseases of ear & Mastoid process (380-389) Includes: Otitis Media without mention Mastoiditis (381)	2	3	46	10.6	56	10.4
Refractive error (370)	3	2	44	10.2	59	10.9
Other eczema and dermatitis (692)	4	4	26	6.0	35	6.5
Operations on pharynx, tonsils, adenoids (21)	4	5	26	6.0	27	5.0
Diarrheal disease (009) unspecified causative agent	6	13	18	4.2	19	3.5
Hay fever (507)	7	7	17	3.9	25	4.6
Hypertrophy, tonsils, adenoids (500)	8	8	16	3.7	24	4.4
Mumps (072)	9	22	15	3.5	12	2.2
Diarrheal disease (000-008) specified causative agent	10	21	14	3.2	13	2.4
Other diseases and conditions of eye (371-379)	10	8	14	3.2	24	4.4
Symptoms referable to respiratory system (783)	10	15	14	3.2	17	3.1
Obesity, not specified as endocrine origin (277)	13	10	13	3.0	22	4.1
Chronic disease of endocardium (424.9)	14	22	12	2.8	12	2.2
Bronchitis, emphysema, asthma (490-493)	15	5	11	2.5	27	5.0
Measles (055)	15	14	11	2.5	18	3.3
Mental disorders (300-309)	17	11	10	2.3	21	3.9
Other diseases urinary system (590-599)	17	11	10	2.3	21	3.9
Symptoms referable to limbs & joints (787)	19	32	9	2.1	6	1.1
Diseases of blood and blood forming organs (280-289)	19	18	9	2.1	15	2.8

[1]The frequency of conditions defined by a range of codes included separate counts for each occurrence of any code in the range

Source: HAMBID

Among all the conditions listed in Table 7.24, none showed statistical significance mainly due to the small number of conditions reported. For those conditions where more than 10 children had the condition in either the Moscow or Comparison group, 8 had higher SMBRs in the Moscow group and 7 were lower. To summarize, it appears that the frequency of occurrence of these conditions among dependent children was essentially similar and that any differences were undistinguishable from random sampling variation.

For the dependent children of employees that had been stationed in Moscow, it was possible from information reported on the Health History Questionnaire to compute rates of occurrence for the 44 medical conditions by the three categories of exposure status in Moscow: exposed, unexposed and uncertain exposure status. These rates of occurrences and Standardized Morbidity Ratios are presented in Table 7.25. When subcategorized in this manner, the number of individuals in each exposure category and each medical condition group was extremely small. All of these comparisons are presented in Table 7.25. Only one of the differences in SMBRs in these three groups was statistically significant, hernia of the abdominal cavity where the SMBRs were higher in the uncertain and unexposed group.

Inquiries were made of the parents on the HHQ as to whether any of their children had ever had eight selected groups of problems and when they had occurred (Table 7.26). Thus, it was possible to determine any child who developed the problems after the parents' tour at the index study post. The distribution of children's conditions as reported in the Health History Questionnaire that were ever present and that first occurred after the index study tour, with their SMBRs, are presented in Table 7.26 by post of employee. Limiting consideration to those first present after the index study tour, none of the differences were statistically significant between Moscow and the

Table 7.24 Number and rate of occurrence per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] of medical conditions that had occurred during or after index tour as reported on the Health History Questionnaire[2] for dependent children

Condition	Residency Status of Employee: Moscow (N=921) With condition No.	Moscow %	Moscow (PY=9486) Rate per 1000 PY	Comparison (N=1080) With condition No.	Comparison %	Comparison (PY=13709) Rate per 1000 PY	SMBR Moscow	SMBR Comparison	P-value[3] for statistically significant differences
Amebiasis (006)	3	<1%	0.3	1	<1%	0.1	1.6	0.48	- -
Protozoal intestinal disease (007)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Diarrheal disease (009)	1	<1%	0.1	1	<1%	0.1	1.3	0.82	- -
Herpes simplex (054)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Measles (055)	0	0%	0.0	1	<1%	0.1	und.	2.1	- -
Infectious hepatitis (070)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Mumps (072)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Dermatophytosis (110)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Helminthiasis (120-129)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Malignant skin neoplasms (173)	0	0%	0.0	1	<1%	0.1	und.	1.9	- -
Malignant neoplasms, except skin (140-209)	3	<1%	0.3	0	0%	0.0	2.3	und.	- -
Benign neoplasms (210-238)	4	<1%	0.4	7	1%	0.5	0.81	1.2	- -
Diabetes mellitus (250)	0	0%	0.0	2	<1%	0.1	und.	1.6	- -
Obesity, nonendocrine(277)	1	<1%	0.1	1	<1%	0.1	0.91	1.1	- -
Blood diseases (280-289)	10	1%	1.1	3	<1%	0.2	1.5	0.47	N.S.
Neuroses, personality disorders (300-309)	22	2%	2.3	19	2%	1.4	1.2	0.83	N.S.
Migraine (346)	4	<1%	0.4	0	0%	0.0	2.2	und.	- -
Diseases of nerves and peripheral ganglion(350-358)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Inflammatory eye diseases (360-369)	0	0%	0.0	1	<1%	0.1	und.	1.8	- -
Eye, refractive error (370)	0	0%	0.0	0	0%	0.0	und.	und.	- -

[1]Standardized Morbidity Ratio of condition rate for study (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2]The dependent child was entered into this analysis from date when parent employee was in Moscow if child had been born before index tour or when child was born after index tour.

Table 7.24 - continued

Condition	Residency Status of Employee: Moscow (N=921) With condition No.	Moscow %	Moscow (PY=9486) Rate per 1000 PY	Comparison (N=1080) With condition No.	Comparison %	Comparison (PY=13709) Rate per 1000 PY	SMRR Moscow	SMRR Comparison	P-value[3] for statistically significant differences
Eye, other conditons(371-379)	8	1%	0.8	9	1%	0.7	1.0	0.97	N.S.
Diseases of ear and mastoid process (380-389)	5	1%	0.5	7	1%	0.5	0.84	1.2	N.S.
Hypertensive disease(400-404)	1	<1%	0.1	0	0%	0.0	2.9	und.	- -
Ischemic heart disease (410-414)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Other forms of heart disease (420-429)	10	1%	1.1	10	1%	0.7	1.2	0.87	N.S.
Diseases of arteries, arterioles, capillaries (440-448)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Diseases of veins, lymphatics (450-458)	2	<1%	0.2	0	0%	0.0	2.3	und.	- -
Acute respiratory infections, except influenza (460-466)	9	1%	0.9	15	1%	1.1	0.82	1.2	N.S.
Influenza (470-474)	0	0%	0.0	2	<1%	0.1	und.	1.8	- -
Pneumonia (480-486)	9	1%	0.9	8	1%	0.6	1.2	0.86	N.S.
Bronchitis, emphysema, asthma (490-493)	16	2%	1.7	23	2%	1.7	0.92	1.1	N.S.
Other diseases of upper respiratory tract (500-508)	5	1%	0.5	12	1%	0.9	0.72	1.2	N.S.
Other diseases of respiratory system (510-519)	0	0%	0.0	0	0%	0.0	und.	und.	- -
Diseases of esophagus, stomach and duodenum (530-537)	4	<1%	0.4	2	<1%	0.1	1.5	0.61	- -

Table 7.24 - continued

Condition	Residency Status of Employee: Moscow (N=921) With condition No.	%	Moscow (PY=9486) Rate per 1000 PY	Comparison (N=1080) With condition No.	%	Comparison (PY=13709) Rate per 1000 PY	SMBR: Moscow	SMBR: Comparison	P-value[3] for statistically significant differences
Hernia of abdominal cavity (550-553)	15	2%	1.6	15	1%	1.1	1.1	0.89	N.S.
Other diseases of intestine and peritoneum (560-569)	2	<1%	0.2	6	1%	0.4	0.55	1.4	- -
Diseases of liver, gallbladder, pancreas (570-577)	2	<1%	0.2	1	<1%	0.1	1.5	0.61	- -
Diseases of genitourinary system (580-629)	17	2%	1.8	14	1%	1.0	1.2	0.82	N.S.
Complications of pregnancy, childbirth and puerperium (630-678)	0	0%	0.0	1	<1%	0.1	und.	1.6	- -
Diseases of skin and subcutaneous tissue (680-709)	14	2%	1.5	19	2%	1.4	0.94	1.1	N.S.
Diseases of musculoskeletal system and connective tissue (710-738)	7	1%	0.7	13	1%	0.9	0.89	1.1	N.S.
Nervousness and debility (790)	6	1%	0.6	4	<1%	0.3	1.3	0.74	- -
Accidents, poisonings, violence (800-999)	17	2%	1.8	24	2%	1.8	0.94	1.1	N.S.
Accidents, external cause (E800-E999)	7	1%	0.7	7	1%	0.5	1.2	0.85	N.S.

Table 7.25 Number, percent, rate of occurrence per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] of medical conditions that occurred during or after index study tour as reported on the Health History Questionnaires for dependant children by exposure status in Moscow of index employee

Condition	Exposure Status in Moscow of Index Employee									SMBR			P-value[2] for statistically significant differences
	Unexposed			Exposed			Uncertain						
	(N=263)	(PY=2829)	Rate per	(N=292)	(PY=3252)	Rate per	(N=366)	(PY=3405)	Rate per				
	No.	%	1000PY	No.	%	1000PY	No.	%	1000PY	Unexposed	Exposed	Uncertain	
Amebiasis (006)	0	0%	0.0	0	0%	0.0	3	1%	0.9	und.	und.	2.2	- -
Protozoal intestinal disease (007)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Diarrheal disease (009)	1	<1%	0.4	0	0%	0.0	0	0%	0.0	3.4	und.	und.	- -
Herpes simplex (054)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Measles (055)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Infectious hepatitis (070)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Mumps (072)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Dermatophytosis (110)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Helminthiasis (120-129)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Malignant skin neoplasms (173)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Malignant neoplasms, except skin (140-209)	1	<1%	0.4	1	<1%	0.3	1	<1%	0.3	1.0	1.0	0.97	- -
Benign neoplasms (210-238)	2	1%	0.7	0	0%	0.0	2	1%	0.6	1.6	und.	1.3	- -
Diabetes mellitus (250)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Obesity, non-endocrine (277)	0	0%	0.0	0	0%	0.0	1	<1%	0.3	und.	und.	2.2	- -
Blood diseases (280-289)	3	1%	1.1	5	2%	1.5	2	1%	0.6	1.0	1.4	0.57	- -
Neuroses, personality disorders (300-309)	7	3%	2.5	5	2%	1.5	10	3%	2.9	1.1	0.65	1.2	N.S.
Migraine (346)	0	0%	0.0	2	1%	0.6	2	1%	0.6	und.	1.4	1.5	- -
Diseases of nerves and peripheral gangliom(350-358)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Inflammatory eye diseases (360-369)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Eye, refractive error (370)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Eye, other conditions(371-379)	3	1%	1.1	1	<1%	0.3	4	1%	1.2	1.3	0.34	1.5	- -

[1] Standardized Morbidity Ratio of condition rate for exposure group (unexposed, exposed, uncertain) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Table 7.25 - Continued

Condition	Exposure Status in Moscow									SMRR			P-value[2] for statistically significant differences
	Unexposed (N=263) (PY=2829)			Exposed (N=292) (PY=3252)			Uncertain (N=366) (PY=3405)						
	No.	%	Rate per 1000PY	No.	%	Rate per 1000PY	No.	%	Rate per 1000PY	Unexposed	Exposed	Uncertain	
Diseases of ear and mastoid process (380-389)	1	<1%	0.4	3	1%	0.9	1	<1%	0.3	0.73	1.9	0.48	- -
Hypertensive disease (400-404)	0	0%	0.0	1	<1%	0.3	0	0%	0.0	und.	2.6	und.	- -
Ischemic heart disease (410-414)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Other forms of heart disease (420-429)	1	<1%	0.4	3	1%	0.9	6	2%	1.8	0.37	0.88	1.6	- -
Diseases of arteries, arterioles, capillaries (440-448)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Diseases of veins, lymphatics (450-458)	2	1%	0.7	0	0%	0.0	0	0%	0.0	2.5	und.	und.	- -
Acute respiratory infections except influenza (460-466)	2	1%	0.7	1	<1%	0.3	6	2%	1.8	0.80	0.29	1.9	- -
Influenza (470-474)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Pneumonia (480-486)	1	<1%	0.4	4	1%	1.2	4	1%	1.2	0.43	1.1	1.3	- -
Bronchitis, emphysema, asthma (490-493)	4	2%	1.4	5	2%	1.5	7	2%	2.1	0.74	1.1	1.2	- -
Other diseases of upper respiratory tract (500-508)	0	0%	0.0	2	1%	0.6	3	1%	0.9	und.	1.4	1.4	- -
Other diseases of respiratory system (510-519)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Diseases of esophagus, stomach and duodenum (530-537)	0	0%	0.0	3	1%	0.9	1	<1%	0.3	und.	2.5	0.67	- -
Hernia of abdominal cavity (550-553)	3	1%	1.1	1	<1%	0.3	11	3%	3.2	0.73	0.19	2.0	0.009

Table 7.25 - Continued

Condition	Exposure Status in Moscow: Unexposed (N=263) (PY=2829) No.	%	Rate per 1000PY	Exposed (N=292) (PY=3252) No.	%	Rate per 1000PY	Uncertain (N=366) (PY=3405) No.	%	Rate per 1000PY	SMRR: Unexposed	Exposed	Uncertain	P-value[2] for statistically significant differences
Other disease of intestine & peritoneum (560-569)	1	<1%	0.4	0	0%	0.0	1	<1%	0.3	1.3	und.	1.3	- -
Diseases of liver, gall bladder, pancreas (570-577)	0	0%	0.0	1	<1%	0.3	1	<1%	0.3	und.	1.4	1.4	- -
Diseases of genitourinary system (580-629)	6	2%	2.1	4	1%	1.2	7	2%	2.1	1.2	0.68	1.2	N.S.
Complications of pregnancy, childbirth, and puerperium (630-678)	0	0%	0.0	0	0%	0.0	0	0%	0.0	und.	und.	und.	- -
Diseases of skin and subcutaneous tissue (680-709)	3	1%	1.1	4	1%	1.2	7	2%	2.1	0.70	1.0	1.2	N.S.
Diseases of musculoskeletal system, and connective tissue (710-738)	1	<1%	0.4	2	1%	0.6	4	1%	1.2	0.53	0.83	1.5	- -
Nervousness & debility(790)	0	0%	0.0	2	1%	0.6	4	1%	1.2	und.	1.2	1.5	- -
Accidents, poisoning and violence (800-999)	7	3%	2.5	5	2%	1.5	5	1%	1.5	1.4	1.0	0.71	N.S.
Accidents, external cause (E800-E999)	3	1%	1.1	1	<1%	0.3	3	1%	0.9	1.6	0.37	1.3	- -

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Table 7.26 Number, percent, rate of occurrence per 1000 person years (PY) and standardized morbidity ratios (SMBR)[1] of selected medical conditions that were ever present or first present after index study tour as reported on Health History Questionnaire for dependent children by post

Selected conditions	Condition ever present				First present after index study tour						P-value[2] for statistically significant differences
	Moscow (N=812)		Comparison (N=914)		Moscow (PY=9218)		Comparison (PY=12471)		SMBR		
	No.	%	No.	%	No.	Rate per 1000PY	No.	Rate per 1000PY	Moscow	Comparison	
Congenital malformations	29	4%	25	3%	9	1.0	13	1.0	0.83	1.2	N.S.
Leukemia and other malignancies	5	1%	3	1%	1	0.1	1	0.1	1.2	0.84	--
Blood disorders	12	1%	6	1%	7	0.8	2	0.2	1.7	0.42	N.S. (.06)
Mental or nervous conditions	19	2%	11	1%	8	0.9	2	0.2	1.8	0.36	--
Behavioral problem	18	2%	10	1%	7	0.8	4	0.3	1.4	0.68	N.S.
Chronic disease	22	3%	26	3%	7	0.8	6	0.5	1.1	0.88	N.S.
Hospitalizations or operations	88	11%	105	11%	29	3.1	28	2.2	1.1	0.89	N.S.
Other conditions	65	8%	72	8%	28	3.0	31	2.5	1.0	0.97	N.S.

[1] Standardized Morbidity Ratio of condition rate for each group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6CC

Comparison groups; blood disorders (anemia), were of borderline statistical significance (P=.06), with the higher frequency in the Moscow group. All the others were not statistically significant. However, the SMBRs were higher in Moscow for seven of these eight groups of conditions despite the absence of statistical significance. Since these conditions were reported by the parents for their children and there might be a higher sensitivity of reporting for the Moscow group, it was of interest to determine what the frequency of occurrence was in the various exposure groups within Moscow (Table 7.27).

None of the differences were statistically significant between the different exposure groups. The frequency of occurrence for congenital anomalies was slightly higher in the exposed than in the unexposed group (SMBR of 1.4 vs 1.0) but the number of cases was too small for any significance to be attached to this difference (4 in the exposed and 3 in the unexposed group). In all of the other groups of problems, the SMBRs were higher in the unexposed than the exposed groups, except for the broad category of "other conditions" where the exposed group SMBR was 0.93 as compared to 0.86 in the unexposed group. Again, the rates of occurrence were relatively low.

Congenital Anomalies Summary

Information concerning the occurrence of congenital anomalies in children born after the arrival of one or more parents at the Moscow or Comparison index posts was available from three sources:

- Deaths due to congenital anomalies
- Health History Questionnaire of index employees or spouse
- Medical Abstracts of children's medical records

The information on deaths from malformations in children born after the index study tour was presented in Table 7.17 (2 in the Moscow group and 6 in the Comparison group). Table 7.28 presents results from the Health History Questionnaire. Out of 745 children reported on the

MB25A

Table 7.27 Number and rate of occurrence per 1000 person years (PY) for specified conditions in children of Moscow employees reported on Health History Questionnaires and standardized morbidity ratios (SMBR)[1] by exposure to other than background levels of microwave radiation of index employee

Selected conditions	Exposure Status in Moscow of Index Employee						SMBR			P-value[2] for statistically significant differences
	Unexposed (N=269)	(PY=3066)	Exposed (N=240)	(PY=2833)	Uncertain Exposure (N=303)	(PY=3319)				
	No.	Rate per 1000PY	No.	Rate per 1000PY	No.	Rate per 1000PY	Unexpd	Exposed	Unctn.	
Congenital malformations	3	1.0	4	1.4	2	0.6	1.1	1.4	0.59	--
Leukemia, other malignancies	1	0.3	0	0.0	0	0.0	2.9	und.	und.	--
Blood disorders	4	1.3	1	0.4	2	0.6	1.9	0.47	0.72	--
Mental or nervous conditions	3	1.0	2	0.7	3	0.9	1.4	0.8	0.9	--
Behavioral problems	2	0.7	1	0.4	4	1.2	1.1	0.45	1.4	--
Chronic disease	3	1.0	2	0.7	2	0.6	1.7	0.88	0.67	--
Hospitalizations or operations	9	2.9	9	3.2	11	3.3	1.1	0.96	0.96	N.S.
Other conditions	7	2.3	8	2.8	13	3.9	0.86	0.93	1.2	N.S.

[1] Standardized Morbidity Ratios of condition rate for each group (Moscow or Comparison) to population condition rate adjusted for year of entry and age at entry; und. = undefined

[2] N.S. = Not Significant, P-value greater than .05, -- = Statistical test not done (10 or less total events)

Source: HHQMB6BC

HHQ as born after the arrival of one or both parents at the index post, 20 had congenital anomalies (2% of the Moscow children versus 3% of the Comparison children). The Moscow group reported fewer anomalies as reflected by the observed to expected ratios (0.7 for Moscow and 1.2 for Comparison). However, the reported numbers available for study were too small to detect any evidence of a difference in the rate of congenital anomalies between the two groups of children. It should be noted that the number of malformations after the index study tour in Table 7.28 (6 in Moscow and 14 in Comparison groups) do not agree with the number reported in Table 7.26 for two reasons, even though both were derived from the HHQ, (9 in Moscow and 13 in the Comparison groups). Table 7.26 was derived from a checklist type of question inquiring about any children with malformations and requesting specific details. If no details as to the type of information was given, it could not be coded for inclusion in Table 7.28. Also, the checklist tabulations were limited to individuals who had completed long forms of the HHQ whereas Table 7.28 included any malformations of children mentioned on either type of HHQ (short or long).

The corresponding data for congenital anomalies ascertained from the review of the medical records of employees and their families is shown in Table 7.29. It is apparent that more anomalies were discovered by this method—51 out of 674 children were found to have malformations (7% of the Moscow group and 8% of the Comparison group). However, the total group of anomalies contains a broad spectrum of types in each of the comparison groups without any particular concentration of any one type. They occur generally in proportion to the number of children in each group.

DMB7

Table 7.28 Observed number of congenital anomalies and observed to expected ratios[1] in children born after the index Moscow tour (327 children) and after the index Comparison tour (428 children) as reported on the Health History Questionnaire

Congenital Anomaly Class (ICDA 8th revision)	Observed No. of Congenital Anomalies in Children Born After Index Tour		Observed to Expected Ratios	
	Moscow Parent	Comparison Parent	Moscow Parent	Comparison Parent
All Anomalies	6 (2%)	14 (3%)	0.7	1.2
Spina bifida (741 + 756.2)	1	1	1.1	0.9
Nervous system (743)	1	1	1.1	0.9
Eye (744)	0	1	0.0	1.7
Heart (746)	0	1	0.0	1.7
Other circulatory (747)	0	1	0.0	1.7
Cleft lip and palate (749)	0	1	0.0	1.7
Genital organs (752)	1	1	1.1	0.9
Urinary system (753)	0	1	0.0	1.7
Clubfoot (754)	1	1	0.0	1.7
Other limb (755)	1	3	0.6	1.3
Musculoskeletal (756)	1	2	0.8	1.2

[1] Computed as the ratio of the observed number of anomalies of a given type to the expected number for the group. Expected numbers were computed by allocating the total number of anomalies to the Moscow and Comparison groups in proportion to the total children observed in each group.

SOURCE: HHQMB3M

DMB8

Table 7.29 Observed number of congenital anomalies and observed to expected ratios[1] in children born after the index Moscow tour (278 children) and after the index Comparison tour (396 children) as reported on Medical Abstracts

Congenital Anomaly Class (ICDA 8th revision)	Observed No. of Congenital Anomalies in Children Born After Index Tour		Observed to Expected Ratios	
	Moscow Parent	Comparison Parent	Moscow Parent	Comparison Parent
All Anomalies	19 (7%)	32 (8%)	0.9	1.1
Spina bifida (741 + 756.2)	1	1	1.2	0.8
Nervous system (743)	1	0	2.5	0.0
Eye (744)	2	4	0.8	1.1
Ear (745)	1	0	2.5	0.0
Heart (746)	0	3	0.0	1.7
Respiratory system (748)	0	3	0.0	1.7
Cleft lip and palate (749)	1	0	2.5	0.0
Upper alimentary tract (750)	2	1	1.7	0.6
Other digestive (751)	0	1	0.0	1.7
Genital organs (752)	2	4	0.8	1.1
Clubfoot (754)	4	3	1.4	0.7
Other limb (755)	2	8	0.5	1.4
Skin (757)	3	4	1.0	0.9

[1] Computed as the ratio of the observed number of anomalies of a given type to the expected number for the group. Expected numbers were computed by allocating the total number of anomalies to the Moscow and Comparison groups in proportion to the total children observed in each group.

SOURCE: MAMB1DM

SECTION 8 - DISCUSSION AND SUMMARY

Before summarizing the findings of this study, it is important to review the limitations of the study, some of which have been discussed earlier.

SOME LIMITATIONS

One of the major problems in this study was the identification of the study population. The main difficulty was the lack of routine procedures or methods for maintaining the records of individuals (except for those currently employed by the Department of State) who have served tours of duty at foreign embassies and consulates. Thus it was necessary to reconstruct the population who had served at any of the study posts during the period 1953 to 1976, using various procedures. Although it is felt that this reconstruction was very nearly complete, it is impossible to state with absolute certainty what proportion of the entire population was identified. This is particularly true for the Department of Defense personnel for whom the difficulties in reconstructing the population were much greater than for the Department of State population.

As an example of one of the problems that arose in attempting to enumerate all of those who had served in the study posts during the study period, several weeks after the data collection had terminated, during the final stages of preparing this report, a list containing 306 names of "personnel who served in Moscow" compiled in 1968 as part of a project called "TUMS" was made available to the study staff. It also included dates of service and a qualitative assessment of the exposure of each employee to the microwave surveillance beams. The existence of such a list was completely unknown to the study staff and would have been a great aid in the early stages of the study. It was not feasible to incorporate the exposure data into any revised analyses. However, the list

of names was compared with our study population and over 95% of the individuals on the list had been included in the study.

The identification of the dependents of the employees was even more difficult since it often had to be based on fragments of information obtained from medical records, tracing inquiries, etc., unless the employee had completed a Health History Questionnaire which was the best source of detailed information on dependents. The constructed population of dependents is undoubtedly incomplete (for both Moscow and Comparison groups) and, unfortunately, there is no reliable way of determining the degree of completeness.

The information on the mortality experience of the employees may be considered reasonably complete because of the tracing success (over 95% of the identified employee population). However, it was not possible to obtain death certificates for approximately one third of the employees and it was therefore necessary to depend upon other sources of information to determine the specific causes of death. Part of the failure to obtain death certificates on a higher percentage of the deaths was due to the lack of sufficient information on the deaths to request certificates; partly because a number of deaths occurred overseas and further because of time constraints (it can take up to 6 months to receive a copy of a death certificate from a State Health Department).

It was anticipated that the foreign service population would be most responsive to completing a mailed questionnaire requesting the information needed to fulfill the objectives of the study. However, the response rate to the mailed questionnaire was disappointing (33%), making it necessary to change to telephone interviewing. This proved very productive but time and financial constraints of the study did not permit pursuing it

to the fullest extent possible and, therefore, the final response rate to the Health History Questionnaire was 52% for State Department and 38% for Non-State Department employees. Among Moscow State Department employees it was 59% compared with 48% of the Comparison State Department group. The total study population was very mobile and it was often necessary to telephone overseas posts, since there was no definitive current list of the location of many active employees. The Foreign Service Lounge and military locators were helpful in this regard.

The relatively low response rate to the Health History Questionnaire imposes many potential limitations on the interpretation of the morbidity experience of the employees and their dependents. For employees, this limitation was somewhat balanced by the large amount of information available in the medical records which contained the findings of the routine, periodic examinations and examinations for medical problems that were performed on this civil and military service population. It was possible to obtain medical records for over 80% of the State Department employees, but for only a little over 40% of the military group. Some form of health status information, either from a medical record or a completed questionnaire, was available for 92% of the State Department and 64% of the Non-State Department groups.

The most severe problem raised by the degree of incomplete response to the Health History Questionnaire is the possibility that those who responded may represent a biased portion of the study population with respect to health status or factors affecting health status and that the bias was present to different degrees in the Moscow and Comparison dependents. In an attempt to determine if the potential for bias was approximately equal in the two groups, a variety of characteristics of

respondents and non-respondents were compared. Although a few differences were noted, the general similarities of respondents and non-respondents with respect to many characteristics were striking. However, the possibility that the groups were unequal with respect to characteristics not observed cannot be ruled out. Similar comparisons of selected characteristics were made between employees on whom medical records could be located and those for whom none could be located and, fortunately, no important differences indicative of bias were noted.

Another major problem, mainly due to the incomplete response to the Health History Questionnaire, was the classification of exposure to the microwave beams for the Moscow embassy employees. No records could be located during the course of the study which indicated where employees had worked or lived. Consequently, it was only possible to determine exposure status if a Health History Questionnaire was returned and then, only if the individual remembered where he or she had worked and lived within embassy. Many could not remember enough details of their working and living locations to allow classification of their exposure status. Even when adequate information on working and living quarters and the time period that the employee was in Moscow was available, exposure status had to be determined and categorized using the worksheet and maps (shown in Appendix 11) provided by the Department of State. The worksheet provides the exposure levels for only two time periods: before May, 1975 and after May, 1975. The microwave beam illumination for the whole period from the beginning of our surveillance in 1953 until May 1975 was said to conform approximately to the exposure intensity levels given on this worksheet. However, the study staff was unable to gain access to the basic data on the intensity measurements from which the worksheet was derived (see memorandum in Appendix 11) before the preparation of this report.

The possibility that one or more Comparison posts were exposed to microwave surveillance could compromise their use as a comparison for the Moscow population. As far as could be determined, no microwave levels other than background intensities have ever been discovered (see once again, the memorandum in Appendix 11). Unfortunately, no access to the underlying data collected was possible before the preparation of this report. It should be noted that the selection of the Comparison posts was independently made by the study staff in an attempt to equalize, insofar as possible, selection factors that may have influenced health status.

Another problem regarding the influence of exposure is that the highest exposure levels (up to 15 microwatts per cm^2) were recorded in the period from June 1975 to February 1976, and therefore, for the group with the estimated highest exposure, the period of time during which health effects might become apparent, was the shortest.

Since a major comparison was between employees who had lived in Moscow with those who had lived at the Eastern European study posts, it was reassuring to find that the employees in these two groups had many similar characteristics. However, information on factors that may have an influence on certain diseases (i.e., risk factors) was not available or was not analyzed with the exception of cigarette smoking histories and blood pressure which were found to be nearly identical in the two groups.

Another factor must also be considered in the interpretation of the findings of the study, namely, whether the groups studied were large enough to permit a reasonable chance of detecting statistically significant excess risks that may have resulted from exposure to microwaves.

The ability of the study to detect excess risks of any particular disease or condition was determined by the size of the excess risk, the incidence of the condition under question in the study population, and the number of person years of observation on the two groups to be compared. In statistical terms, this ability is expressed as the probability of finding a statistically significant excess risk for a given incidence and number of observations. It is conventional practice that this probability should be at least .80 (at a significance level of P = .05) in order for a study to be considered to have a reasonable (at least 80%) chance of detecting a given excess risk. Table 8.1 shows the ranges of excess risks, expressed as risk ratios, (i.e. the ratio of the rates in the two groups being compared), which the present study could have detected for 4 hypothetical event rates. The detectable risk ratios vary depending on the source of the comparisons to be made, mainly reflecting the different numbers of person-years of observation associated with each. For comparisons of the Moscow male employees with their counterparts from Comparison posts, excess risk ratios of 1.3 to 4 could have been detected for mortality or morbidity events occurring with a frequency of 1 in 100 or 1 in 1000 person-years, respectively. Only much higher ratios could have been detected for events with frequencies of 1 in 10,000 or lower. Similar comparisons of Moscow and Comparison post female employees show detectable risks of 1.6 to 3 for events with a frequency of 1 in 100 and of 3.5 to 6 for events with a frequency of 1 in 1000. Events which occured at frequencies of 1 in 10,000 or lower would have been detected only if very large excesses were present. Table 8.1 shows that comparisons of morbidity rates among the Moscow male employees known to be exposed to other than background levels of microwave radiation with those known to be unexposed could have been expected to detect risk ratios of 2 to 3 for events with a frequency of 1 in 100 and even higher risks for events with lower frequencies.

Table 8.1 Minimum excess risk ratios[1] detectable by the Foreign Service Health Status Study for Moscow versus Comparison post employees and employees exposed to other than background levels of microwave radiation in Moscow versus unexposed Moscow employees for a range of hypothetical mortality and morbidity event rates

Sex	Hypothetical Event Rate Per Person-Year	Minimum Detectable Excess Risk Ratios in the Foreign Service Health Status Study			
		MOSCOW vs COMPARISON			Moscow EXPOSED vs UNEXPOSED
		Mortality	Morbidity		Morbidity
			Medical Records	Health History Questionnaire	Health History Questionnaire
Males	1/100	1.3 to 1.4	1.4 to 1.5	1.5 to 2	2 to 3
	1/1000	2.2 to 2.5	2.5 to 3	3.5 to 4	5 to 6
	1/10,000	7 to 8	8 to 10	10 to 15	25 to 50
	1/100,000	30 to 50	50 to 75	75 to 100	>100
Females	1/100	1.6 to 1.8	2 to 2.5	2 to 3	3 to 4
	1/1000	3.5 to 4	4 to 5	5 to 6	10 to 20
	1/10,000	15 to 20	15 to 20	25 to 50	50 to 100
	1/100,000	>100	>100	>100	>100

[1] Risk ratios which could be detected with a probability (power) of at least .8 assuming a two-tailed statistical significance test with a significance level of .05. Power calculations assumed a Poisson distribution for events in the two groups to be compared and that the statistical test to be used was the exact test for equality of two Poisson parameters. The person-years of observation used in the calculations were those actually observed in the study.

The limitation to the detection of only large excess risks was present in the comparison of female exposed and unexposed employees to an even greater degree than for the males. This information would indicate that, except for relatively frequent events, it would have been possible to detect only moderate or large differences between the various groups that were compared. The size of the study population, and particularly that of the identified exposed population in Moscow, was not sufficient to detect excess risks that were less than two-fold for many of the medical conditions studied. Larger numbers of individuals or longer periods of observation (i.e. follow-up) would have been necessary for many conditions of interest. For all malignant neoplasms, which occurred with a frequency of about 1 per 1,000 among males and 5 per 1,000 among females after the first study tour of duty, a statistically significant two-fold increase could have been detected. However, in the case of specific types of neoplasms which occurred with a lower frequency, the size of the study population was not adequate to find statistically significant increased risks unless they were unusually large, approximately of the order of a 5 to 10 fold excess or higher.

THE FINDINGS

Over 1,800 employees at the Moscow embassy during the period 1953 to 1976 and more than 3,000 of their dependents were finally identified for study. A Comparison group consisting of over 2,500 employees who worked at nine Eastern European posts during the same time period and 5,000 of their dependents was also identified. In all, there were 4,388 employees and 8,283 dependents under study. Two out of 3 of the employees identified were employed by the Department of State and 2 out of 3 dependents were children.

During the course of the study, which was begun in the summer of 1976 and finished two years later, more than 95% of the identified employees were located and determined to be living or dead. An attempt was made to

obtain the medical records of all members of the study population accumulated during their years of employment. Records were obtained and reviewed on over 3,000 employees with success in obtaining records much better for Department of State employees (84%) than for Non-State Department employees (43%). Nearly 22,000 individual medical examinations were included in this review. Equal success was experienced in locating study employees and their medical records in both Moscow and Comparison employee groups.

An attempt was made to obtain a completed questionnaire (Health History Questionnaire) from each employee whose current location could be determined using both mail and telephone interviewing methods. Information was sought on the health status of the employees and many dependents, and for the Moscow group, working and living areas while in Moscow from which the exposure status to microwave radiation was determined. Completed questionnaires were obtained from only 52% of the State Department employees (59% from the Moscow group and 48% from the Comparison group) and only 38% of the Non-State Department employees (43% from the Moscow group and 34% from the Comparison group).

Even though a large number of dependents were identified and over 90% of those identified were located and determined to be living or dead, ascertainment of dependents was undoubtedly incomplete. The Health History Questionnaire was the most reliable and complete source for identifying dependents and determining whether they had lived at the service posts of concern to the study. Unfortunately, this source was often unavailable. Nevertheless, medical records of about 3,900 dependents were located and reviewed. A certain amount of information on the health status of dependents was also derived from the Health History Questionnaire.

Obviously, the most important health effect on a population would be reduced longevity or early death. Although there were 152 deaths among the male employees studied, this experience was estimated to be only 50% of the

mortality expected based on United States population mortality rates for white males. Moreover, no differences were observed between the Moscow and Comparison groups either in total mortality or in mortality from cancer, which was proportionately more frequent than the other causes of death in both groups, but still somewhat less in the Moscow group and somewhat higher in the Comparison group than expected from the U.S. mortality experience.

The mortality experience of the female employees was not as favorable as observed for the males with the 42 observed deaths representing 80% of the expected mortality based on the United States population experience. There were no discernible differences between the Moscow and Comparison females in total mortality or mortality from specific causes. A relatively high proportion of cancer deaths in both female employee groups was noted—8 out of 11 deaths among the Moscow and 14 out of 31 deaths among the Comparison group. However, it was not possible to find any satisfactory explanation for this, due mainly to the small numbers of deaths involved and the absence of information on many epidemiological characteristics that influence the occurrence of various types of malignant neoplasms.

To summarize the mortality experience observed in the employees' groups: there is no evidence that the Moscow group has experienced any higher total mortality or for any specific causes of death up to this time. It should be noted, however, that the population studied was relatively young and it is too early to have been able to detect long term mortality effects except for those who had served in the earliest period of the study.

The interpretation of the mortality experienced by dependents, both adults and children, is made difficult by the problems of under ascertainment discussed earlier. However, these problems appeared, for all practical purposes, to be present to the same degree in both the Moscow and Comparison groups. Therefore, it is reasonable to conclude from the results of the

analysis of the experience of the identified dependents, that no differences in mortality were detected between the Moscow and Comparison dependent groups of children or adults. The dependents (adults and children), who were known to have resided at the employee's service post, all fared slightly better than would have been expected on the basis of the United States population mortality experience with no notable difference between the Moscow and Comparison groups. On the other hand, the dependents whose residence status was unknown or who were not at the post had less favorable mortality experience in comparison with the U.S. population, but with little difference between the Moscow and Comparison groups.

Alterations in the health status of a population produced by the introduction of some health hazard would, in all likelihood, be detected first by an increase in the frequency of non-fatal morbid conditions, particularly in a group that was examined as frequently as was this study group. Every possible effort was made to find any evidence of such an increase in the employees who had served in Moscow relative to those who had served in Comparison posts but not in Moscow. Literally hundreds of comparisons were made based on information obtained in the medical records of the two groups of employees. The study group was found to be subject to a large variety of health problems, many of which were serious; but to a great degree, the risks of developing these problems were shared nearly equally by both groups. Only two differences, based on the medical record review, stood out: 1) the Moscow male employees had a three-fold higher risk of acquiring protozoal infections between the time of arrival at the post and the time of last observation than did the Comparison employees and 2) both men and women in the Moscow group were found to have slightly higher frequencies of most of the common kinds of health conditions reported. However, these conditions represented a very heterogeneous collection and it is difficult to conclude

that they could have been related to exposure to microwave radiation since no consistent pattern of increased frequency in the group exposed to other than background microwave radiation could be found.

A somewhat different indication of the health status of the two employee groups was derived from analysis of the responses to the Health History Questionnaire. While many reported problems were similar in both groups, there were some noteworthy excesses in the Moscow employee group. Both men and women reported more problems with their eyes; however, most of this increase was due to correctable refractive errors. The men reported more problems with psoriasis and women with anemia. The Moscow group, especially the men, reported a variety of symptoms after their study tour much more frequently than the Comparison group: more depression, more irritability, more difficulty concentrating and more memory loss. Many other symptoms were higher in the Moscow group but not to the same degree as these four. In view of the possibilities which had been publicized of the increased danger to their health and that of their children, it is not at all surprising that the Moscow group might have had an increase in symptoms such as those reported. However, no relationship was found between the occurrence of these symptoms and exposure to microwaves; in fact, the four symptoms mentioned earlier, which showed the strongest differences between the Moscow and Comparison groups, were all found to have occurred most frequently in the group with the least exposure to microwaves.

In spite of the problems encountered in enumerating all dependents, the morbidity experience of dependents, both adults and children, was analyzed using available data from the medical record review and from the Health History Questionnaire. No consistent differences were noted among adults taking into account whether or not they had resided at the post at the time of service.

The children studied had experienced many health problems, the vast majority of which were similar in both the Moscow and Comparison groups. The only problem definitely present to a greater extent in the children who had lived in Moscow compared with those who had lived in one of the Comparison posts was the occurrence of mumps which was more than twice as frequent in the Moscow children during the period from the time of arrival at the embassy until the time of the last observation.

Congenital anomalies occurring after arrival at the study posts were studied and, although anomalies had occurred, no difference could be detected between the two study groups in this regard.

To summarize, with very few exceptions, an exhaustive comparison of the health status of the State and Non-State Department employees who had served in Moscow with those who had served in other Eastern European posts during the same period of time revealed no differences in health status as indicated by their mortality experience and a vareity of morbidity measures. No convincing evidence was discovered that would directly implicate the exposure to microwave radiation experienced by the employees at the Moscow embassy in the causation of any adverse health effects as of the time of this analysis.

RECOMMENDATIONS

The results of this study may well be interpreted as indicating that exposure to microwave radiation at the levels experienced at the Moscow embassy has not produced any deleterious health effects thus far. It should be clear however, that with the limitations previously discussed, any generalizations should be cautiously made. All that can be said at present is that no deleterious effects have been noted in the study population, based on the data that have been collected and analyzed. Since the group with the

highest exposure to microwaves, those who were present at the Moscow embassy during the period from June 1975 to February 1976, has had only a short time for any effects to appear, it would seem desirable that this particular study population should be contacted at periodic intervals, of 2 to 3 years, within the next several years, in order to ascertain if any health effects would appear. Furthermore, it would be important to develop a surveillance system for deaths in the entire study population to be certain that no mortality differences occur in the future and to monitor the proportion of deaths due to malignancies, especially among the women.

There is also a need for an authoritative biophysical analysis of the microwave field that has been illuminating the Moscow embassy during the past 25 years with assessments based on theoretical considerations of the likelihood of any biological effects. Sufficient data was not made available to have included such an analysis in the present study, although much information on the microwave field has been collected by the Department of State and is now available.

Since there is a considerable need to determine whether microwave exposure does have any deleterious health effects, every effort should be made to ascertain whether there are any other population groups who have had or are having unusual exposures to microwaves. Epidemiological studies of such populations, similar in nature to the current study, should be initiated. These recommended epidemiological studies should have incorporated into them various types of clinical and laboratory studies. It should be emphasized that such studies should not be conducted on haphazardly selected samples

with numbers of individuals which are inadequate to rigorously test the hypothesis. The conduct of such studies requires a sufficient amount of time for developing an appropriate study design and an adequate protocol for its conduct. The opportunity for further study of State Department employees should not be neglected.

As a result of the experience gained during the conduct of this study, it is strongly recommended that the Department of State develop and maintain a continuing record of all individuals who are assigned to the various embassies and consular posts of the Department. In view of the various aspects of the environment (biological, physical, and others) to which State Department personnel may be exposed during their tours of duty, it is conceivable that similar long-term studies may have to be conducted for a variety of reasons. If such a system is instituted, such epidemiological studies could be conducted without many of the problems encountered in this one.

In addition, during the conduct of this study, it has become clear that the Department of State needs an epidemiological and biostatistical unit with a competent and well-trained staff who would be responsible for the conduct of similar studies, or arranging for their conduct by other agencies or institutions as the need arises, as well as serving as a source of necessary consultation in these areas to different units of the State Department. Such a unit would be of inestimable value to the Office of Medical Services in providing epidemiological and biostatistical competence to the already existing clinical competence.

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LIST OF APPENDICES

Appt

FOREIGN SERVICE HEALTH STATUS STUDY STAFF ?

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CHRISTOPHER GIBB

JOSEPHINE GRAHAM

BRUCE HANLEY

DAVID HANLEY

MILDRED HARDY

DONNA HARVEY

LESLIE HYMAN

LILLIAN INGSTER

KATHLEEN JONES

SUSAN KEOGH

NADINE KFOURY

NANCY KIRKSEY

VICTORIA KISIELE

CATHERINE KREUTER

GREGORY KRUSE

DIANE KUEGLER

BETSY KUPFER

CHARLES LEIMBACH

CYNTHIA LEPPERT

OLIVIA LIECHTY

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FOREIGN SERVICE HEALTH STATUS STUDY (CONTINUED)

PAM LINGERFELT
EILEEN LOCKLEAR
NORMA LUTINS
ANNE MAGUIRE
MAIRI MAGUIRE
GEETHA MAMMEN
JOHN MANNINO
DIANE MARKAKIS
ANNE MARIE MCADAMS
MARGARITA MILLER
DONNA MILLEY
ANNE MOISAN
LENORE NEIGEBORN
OLIVIA NEVINS
VERA NISSENBAUM
JOCELYN ORBOCK
MARIA PASTORE
HARRY PEYTON
PAUL PLATZMAN
ROMAN PODOLAK
DEBORAH PONDS
MARIE RAMPOLLA
ANGELA RAPPA
JAYAKUMAR REUBEN
EILEEN ROCKLIN
WILLIAM ROLLINS
JAMES ROSS

EILEEN ROY
GAIL RUBENSTEIN
PRABHAKAR SAMSON
DAVID SAMUELS
MARGARET SCANNEL
EMORY SCHWARTZ
KENNETH SILVER
BONNIE SOBELMAN
JONATHAN SOBELMAN
LAURA SOBELMAN
PETER SOROCK
HEATHER SOUTHWICK
KAREN SOUTHWICK
KIMBERLY SPONAGLE
DENISE SPRINGER
CHERYL STEVENSON
DAVID STEWART
PAUL STUMPF
THOMAS SZYMECKO
DEAN TELEGO
KATHERINE TERRELL
DENNIS TOWNS
KAREN URBAITIS
MARIA VALLS
MICHELLE VANNI
SUSAN VITILIO
HELEN WALDORF

FOREIGN SERVICE HEALTH STATUS STUDY (CONTINUED)

DONNA WARD

PEGGY WATSON

LAURIE WESTON

DEBORA WHEELER

JOHN WOOD

ANNE YOUNG

GREGORY YOUNG

NICHOLAS YOUNG

MARY YURACHEK

A1p-4

FOREIGN SERVICE HEALTH STATUS STUDY - SURVEY RESEARCH UNIT

JOAN L BARBA

ADA B BEYRODT

SHIRLEY BLUMBERG

DEBORAH CEBULA

CAROL A CHAMBERS

JOAN CWI

EVELYN DICKMAN

BEVERLY DIGIAMMARINO

SANDRA ESSLINGER

PATRICIA FISHELMAN

SHIRLEY GOLDBERG

ISOBEL KEMPER

NAOMI KOBIN

DEBORAH LEBULA

PATRICIA LESHO

BERNICE MILLMAN

DIANE MONHEIT

LAURI MYERS

HAZEL PERDUE

NOMA ROBINSON

LOTTCHEN SHIVERS

ELLEN SIMANSKI

SHIRLEY SIMCIK

VITAL RECORDS

MARY RITA DOAK

REBA MIECZNIKOSKI

A2 p.1

NAME (Last) (First) (Middle) | SEX Male / Fem. | DATE OF BIRTH | PLACE OF BIRTH | LEGAL RESIDENCE (State) | DRAFT STATUS | VET. STATUS 5pt / 10pt / Disab. / Other

PERMANENT ADDRESS | CITIZEN U.S. Nat. | MARITAL STATUS Single / Married | PL. OF APP. U.S. / Local | BIRTH DATES AND NAMES OF CHILDREN | RESERVE STATUS

NO. DEP. AT POST | CITIZ. SPOUSE U.S. / Nat. / Alien (Specify) | MAR. / EMPLOY. F / PT / FT / PT

Service

Rank

Ser. No.

Soc. Sec. No.

NATURE OF ACTION	POST	POSITION TITLE	POSITION NO.	CLASS	SALARY	PROGRAM	APPROPRIATIONS	EFFECTIVE DATE	ARRIVAL DATE	DEPARTURE DATE	ACTION DATE

A2 Rev2

NATURE OF ACTION	POST	POSITION TITLE	POSITION NO.	CLASS	SALARY	PROGRAM	APPROPRIATION	EFFECTIVE DATE	ARRIVAL DATE	DEPARTURE DATE	ACTION DATE

REASON FOR RESIGNATION

ADDRESS AT TIME OF RESIGNATION

ELIGIBILITY HOME LEAVE

REMARKS

EFFICIENCY RATING

DATE	RATING

EDUCATION	Grade School	High School	Trade School	Business School	COLLEGE OR UNIV. Undergrad	COLLEGE OR UNIV. Grad.	Degrees	Name of College or Univ.
YEARS COMPLETED								
MAJOR SUBJECTS								

LANGUAGES *(In which employee is fluent and sufficiently proficient for transaction of office business: Steno. and Typing speeds in Foreign Languages.)*

FRENCH		NEAR EAST	
GERMAN		FAR EAST	
SPANISH		OTHER	
RUSSIAN		STENO. & TYPING SPEEDS	

PREVIOUS EXPERIENCE *(Include total no. of years in State Dept. excluding Foreign Service machines used: Special skills and licenses: Stenographic and Typing speeds.)*

IN-SERVICE TRAINING *(Include language training)*

Date Completed	Length of Course	Type	Result

LANGUAGE TRAINING PREFERENCE

1. Near Eastern		4. Other *(Specify below)*
2. Far Eastern		
3. Russian		

NEXT OF KIN AND EMERGENCY ADDRESS	HOME LEAVE ADDRESS	DATE	LIMITATIONS ON TRANSFER (incl. phys. cond. or handicap)	POST OR AREA PREFERENCES (Including present post)
				1. 2. 3.

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DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES
ROOM 2906 Ext. 23642

NAME: _____

LAB TESTS -
PHYSICAL EXAM -

** 1. Fast from Midnight (except for water) until your first appointment.

OF-11 DS-1456
-71

DEPARTMENT OF STATE
MEDICAL EXAMINATION REGISTRATION FORM

Name Of Agency Requiring The Examination:	Date of Birth (Month, Day, Year):
Telephone No. For Contact During Daytime:	PASA Assignment with AID? ____ yes ____ no
Name & Telephone No. of Personnel Officer Requesting Examination:	Do You Have A Previous Examination Record in The Medical Division? ____ yes ____ year ____ no
Of Examination (Complete All Data): ____ Preemployment ___ CS ___ FS ___ Other ____ ____ In-service ___ CS ___ FS ___ Other ____ ____ Separation from Foreign Service ____ TDY Special (Specify) ____ ____ Conversion Program — To: FAS / FSO	Appointments: (Date and Time) LAB _____ EXAM _____ (To change appointments, please call 63-21642 promptly.)
Employee Name (PRINT Last, First, Middle)	If Dependent, Give Employee's Name:

PLEASE PRINT ALL INFORMATION

* U. S. GOVERNMENT PRINTING OFFICE: 1975—570-740

DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES
Room 2906

M _____

has an appointment with

Dr. _____

_____ at _____

_____ at _____

If unable to keep this engagement please telephone 63
24 hours in advance to arrange another appointment.

MED-61
rev. 8/6

12 p4

DEPARTMENT OF STATE
INSTRUCTIONS FOR EXAMINEE

DATE

NAME

Before your examination is finished, it will be necessary for you to complete the procedures checked below and have them initialed by the technician.

When all of the required procedures have been completed, YOU SHOULD RETURN THIS FORM TO THE RECEPTION DESK.

Your medical clearance cannot be issued until all parts of your medical examination have been completed.

	PROCEDURE	INITIALS		PROCEDURE	INITIALS
X	X-Ray		X	Pulse	
X	Blood Examination		X	Height and Weight	
X	Urinalysis		X	Physical Examination	
X	Distant Vision Check			Dental Examination	
	Dental X-Ray			Other:	
	The following tests as indicated:				
	Electrocardiogram (If over 40 or going to altitude post)				
	High Altitude Test (If going to altitude post)				

PLEASE NOTE: 1. Inform X-ray technician when you are going to a High Altitude post so that appropriate tests may be made.

2. If you are returning from overseas, you should arrange for a stool examination with the Laboratory technician.

FORM DS-1468
12-70

A-7 p5

COMPLETE ITEMS 1-19 in INK

MEDICAL HISTORY AND EXAMINATION FOR FOREIGN SERVICE

TO BE FILLED OUT BY EXAMINEE

1. NAME OF EXAMINEE (last name, first name, middle name)

2. a. GRADE AND TITLE OF POSITION

b. AGENCY

3. DATE

4. DATE OF BIRTH

5. PLACE OF BIRTH

6. SEX ☐ M ☐ F

7. PURPOSE OF EXAMINATION (check one)
- ☐ Pre-employment
- ☐ In-service or Home Leave
- ☐ Direct Transfer from present post
- ☐ Separation from Foreign Service
- ☐ TDY to _____ for _____ period
- ☐ Other (specify)

8. MAILING ADDRESS: (to expedite medical clearance)

a. Post: (if overseas)

b. U.S.: (mailing/forwarding address) (include ZIP code and tel. no.)

9. IF PASA CASE, NAME OF HOME AGENCY

10. POST ASSIGNMENT AND DATE OF DEPARTURE/ARRIVAL

Last Post _____ EDD _____

New Post _____ EDA _____

☐ Post assignment not known

11. IF DEPENDENT, FULL NAME OF EMPLOYEE (or applicant)

12. FAMILY HISTORY DATA* (If relative has a chronic disease, specify) (If previously answered for Medical Program, indicate "PA")

Relation	Age	*State of Health	If dead, cause of death	Age at death	Children (names)	Age	*State of Health	If dead, cause of death	Age at death
Father									
Mother									
Spouse									
Brothers and Sisters									

13. HAS ANY BLOOD RELATIVE (parent, brother, sister, other), CHILDREN, SPOUSE HAD: (If previously answered, indicate "PA")

Yes	No	(Check each item)	Relation(s)
		Allergy	
		Diabetes	
		Glaucoma	
		Heart Disease	
		High Blood Pressure	

14. STATEMENT OF EXAMINEE'S PRESENT HEALTH, AND MEDICATIONS CURRENTLY USED (Explain fully if complaint exists)

15. REPLY TO ALL APPLICABLE QUESTIONS, OR INDICATE "NA" (not applicable)

a. Were you ever previously examined for the Department's Medical Program? _____ When _____

b. Since that last examination have you:
(1) been hospitalized or medically evacuated? Give diagnosis, if known, date and hospital)

(2) developed any significant medical problem? (Specify)

c. Do you believe any of the conditions mentioned above are compensable under SEC (Bureau of Employees' Compensation? _____

d. If so, have you filed Notice Forms CA-1 and CA-2? _____

e. Is there any special examination or treatment that you have been informed, or believe, is needed before proceeding to your next assignment, or before separation? (Specify)

f. Do you know of any special medical condition which would limit your assignment because of climate, altitude, isolation, the need for specialized medical care, or other reason? (Specify)

DO NOT WRITE IN SPACE BELOW (FOR USE BY MEDICAL DIVISION) - CONTINUE HISTORY ON NEXT PAGE

Clearance Instructions	Clearance Action Taken	Clearance Instructions	Clearance Action Taken

4 2. p6

Yes	No	16. EXAMINEE WILL CHECK "YES" OR "NO"	EXPLANATION (Indicate question number)
		a. Have you treated yourself for illness other than minor colds? (If yes, what illness)	
		b. Have you had any serious illness or injury other than those already noted? (If yes, specify when, where and give details)	
		c. Have you consulted or been treated by clinics, physicians, healers or other practioners? (If yes, give complete address of doctor, hospital, clinic and details)	
		If questions below have been previously answered for a Departmental examination, you may indicate "PA" to the right of the question.	
		d. Have you had any operations, or have you been advised to have any operation? (If yes, describe, and give age at that time)	
		e. Have you ever been a patient in a mental hospital or sanitorium, or been treated by a psychiatrist or psychologist outside of a hospital? (If yes, specify when, where, why, and name of doctor and complete address of hospital or clinic)	
		f. Have you ever been denied life insurance? (If yes, state reason and give details)	
		g. Have you ever been rejected for military service because of physical, mental or other reasons? (If yes, give date and reason for rejection)	
		h. Have you ever been discharged from military service because of advice of medical officer? (If yes, give date, reason and type of discharge; whether honorable, other than honorable; for unfitness or unsuitability)	
		i. Have you ever received, or is there pending, or have you applied for pension or compensation for existing disability? (If yes, specify what kind, granted by whom, and what amount, when, why)	

17. EXAMINEE WILL CIRCLE APPROPRIATE ITEM ON MULTIPLE QUESTIONS ANSWERED "YES". (Check each question at left.)
(A) PRE-EMPLOYMENT EXAMINEE: Have you ever had or have now: (B) IN-SERVICE EXAMINEE: Items below are to be answered as they relate to a condition which has developed SINCE YOUR LAST EXAMINATION under the Department's Medical Program.

Yes	No	(Check each item)	Yes	No	(Check each item)	Yes	No	(Check each item)
		Frequent or severe headaches			Stomach, liver or intestinal trouble			Malaria, amoebic dysentary or other tropical disease
		Epilepsy, fits or fainting spells			Gall bladder trouble or gall stones			Recent gain or loss of weight
		Eye trouble or visual defect in either eye			Jaundice or hepatitis			Stutter or stammer habitually
		Skin disease			Rupture of hernia			Frequent trouble sleeping
		Ear, nose or throat trouble			Piles or other rectal disease			Nervous trouble of any sort
		Severe tooth or gum trouble			Blood in or on the stool, or tarry stools			Depression or excessive worry
		Asthma, hay fever or other allergies			Frequent or painful urination			Attempted suicide
		Shortness of breath			Kidney trouble, stone or blood in urine			Any drug or narcotic habit
		Chronic cough			Sugar or albumin in urine			Used hallucinogenic drug (as LSD) or Marijuana
		Coughing up blood			Diabetes			Excessive bleeding after injury or tooth extraction
		Tuberculosis, or close association with anyone who had or has tuberculosis			Rheumatic fever			Any reaction to serum immunization, drug or medicine
		Pain or pressure in chest			Arthritis, rheumatism or joint pains			Tumor, growth, cyst, or cancer
		Palpitation or pounding heart			Painful or "trick" shoulder or knee			
		Swelling of feet or ankles			Bone, joint or other deformity			
		High blood pressure			Recurrent back pain; wear a back support or brace			
		Frequent indigestion						

18. FEMALE ONLY

During past 3 years have you had:		Yes	No	e. If so, what:
a. Quantity of menses:	normal			
	scanty			
	excessive			f. Date of last menstrual period:
b. Any change in frequency/duration:				g. Approximately how many days have you been unable to work at office or home during past year because of menstrual or female problems:
c. Any complicated preonancy or problem after childbirth:				
Any female disorders:				

NOTE: Be sure that all detail are recorded, as any future benefits may depend upon the accuracy and completeness of this record.

I certify that I have reviewed the foregoing information supplied by me, and that it is true and complete to the best of my knowledge.

19. TYPED OR PRINTED NAME OF EXAMINEE	DATE	SIGNATURE OF EXAMINEE

A2 p7

REPORT OF MEDICAL EXAMINATION FOR FOREIGN SERVICE

TO BE COMPLETED BY EXAMINING PHYSICIAN

20. EXAMINING FACILITY OR EXAMINER	ADDRESS	21. DATE OF EXAMINATION

CLINICAL EVALUATION

Normal	(Check each item in appropriate column; enter "NE" if not evaluated)	Abnormal
	22. Head, Face, Neck and Scalp	
	23. Nose and Sinuses	
	24. Mouth and throat	
	25. Ears - including otoscopic (auditory acuity under item 51)	
	26. Eyes - including ocular motility, pupillary reaction and opthalmoscopic (visual acuity under item 50)	
	27. Lungs and Chest (include Breasts)	
	28. Heart (thrust, size, rhythm, sounds)	
	29. Vascular System (varicosities, etc.)	
	30. Abdomen and Viscera (include Hernia)	
	31. Anus and Rectum (Hemorrhoids, Fistulae, condition of Prostate)	
	32. Endocrine System	
	33. G-U System	
	34. Extremities (strength, range of motion)	
	35. Spine, Other Musculoskeletal	
	36. Identifying Body Marks, Scars, Tattoos	
	37. Skin, Lymphatics	
	38. Neurologic	
	39. Psychiatric (specify any personality deviation)	
	40. Pelvic (Indicate if done rectally _____)	

NOTES: (Describe every abnormality in detail. Enter pertinent item number before each comment)

41. DENTAL DEFECTS AND DISEASES

42. SIGMOIDOSCOPIC (If performed)

43. SIGNIFICANT OR INTERVAL HISTORY

GPO : 1978 O - 281-787

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MEASUREMENTS AND OTHER FINDINGS

44. RACE	45. HEIGHT	46. WEIGHT	47. PULSE (Sitting, arm at heart level)	48. BLOOD PRESSURE (Sitting, arm at heart level)
				Sys. _____ Dias. _____

49. INTRAOCULAR TENSION (Over 40 years, and when indicated)	50. DISTANT VISION	51. HEARING
Right _____ Left _____	Right 20/ Corr. to 20/ Left 20/ Corr. to 20/	Right WV /15 SV /15 Left WV /15 SV /15

REQUIRED LABORATORY EXAMINATIONS

52. URINALYSIS

a. Specific Gravity
b. Albumin
c. Sugar
d. Microscopic

53. SEROLOGY (Do only for PRE-EMPLOYMENT Applicants and their dependents, and when indicated) (Specify test used and result)

54. ECG (Over 40 years, and when indicated)

55. HEMATOCRIT (Or Hemoglobin)

56. WBC

57. PAPANICOLAU SMEAR (Female over 21 years)

58. CHEST X-RAY (Place, date, film number, results)

59. STOOL EXAMINATION FOR PARASITES (When indicated by history, or following residence in endemic parasite area) (Specimens in MIF kits may be submitted through Embassy or Consulate to the Department's Medical Division)

60. OPTIONAL TESTS (Not required)

Blood Sugar: _____
Cholesterol: _____
Uric Acid: _____
Other:

61. SUMMARY OF DEFECTS AND DIAGNOSES (List diagnoses with item numbers)

(NOTE: You are requested to inform the examinee of any abnormality which requires medical attention. Please avoid speculation with the examinee as to whether he can be cleared for overseas duty. Such decisions are made solely by the Department of State Medical Director in the light of established medical standards and with full cognizance of health hazards and medical services and facilities in each country.)

62. RECOMMENDATIONS - FURTHER SPECIALIST EXAMINATIONS INDICATED (Specify) Have these been arranged? Yes ____ No ____ (Attach reports)

63. TYPED OR PRINTED NAME OF EXAMINING PHYSICIAN	SIGNATURE	DATE

64. TYPED OR PRINTED NAME OF REVIEWING OFFICER OR APPROVING AUTHORITY	SIGNATURE	DATE

A2p9

DEPARTMENT OF STATE
MEDICAL DIVISION
WASHINGTON, D.C., 20520

MEDICAL EXAMINATION OF DEPENDENT UNDER TWELVE

CHILD'S NAME (Last) (First) (Initial)	DATE OF BIRTH
DEPENDENT OF (Initial)	AGENCY
EXAMINEE'S CURRENT MAILING ADDRESS	
HEIGHT / WEIGHT	SEX

Pursuant to the guidelines on the reverse of this form, a complete personal history and medical examination of the above-named child revealed no abnormality, disease or defect except as noted below:

DEPARTMENT OF STATE
JUN 30 1970
MEDICAL

Results of urinalysis, tuberculosis skin test and any other recommended tests including x-rays: (List tests performed)

ABSRACT ISSUED
JUN 30 1970

APPROVED
JUN 30 1970
DIVISION

DATE OF EXAMINATION	EXAMINING PHYSICIAN'S SIGNATURE

PLACE OF EXAMINATION (Typed or Printed Name and Address of Physician)

FORM DS-1622
9-69

4a p10

DEPARTMENT OF STATE
MEDICAL DIVISION

GUIDELINES FOR THE EXAMINING PHYSICIAN OF DEPENDENT UNDER 12

I. PURPOSE OF EXAMINATION

The individual you are being requested to examine is a dependent of either (1) a candidate for appointment to the Foreign Service of the United States or (2) an active employee of the Foreign Service of the United States. In the case of a dependent of an applicant, the Department desires to ascertain that he is physically and mentally fit to reside abroad. As a member of the family of a potential overseas representative of the U.S. Government, this dependent could play a role in creating our nation's image in foreign areas. Hence your assessment of the soundness of his emotional stability and behavior pattern is of significance in an overall medical evaluation. In the case of the dependent of an active employee, the Department desires to re-affirm his good health and hence his continuing eligibility to reside anywhere in the world, or to detect medical abnormalities which may require correction and which might make it inadvisable to reside abroad.

You are requested to inform the examinee's parents of any abnormality which requires medical attention. It is recommended you avoid speculation as to whether he can be cleared for overseas duty. Such decisions are made solely by the Department's Medical Director in the light of established medical standards and with full cognizance of health hazards and medical services and facilities in each country.

II. SCOPE OF THE EXAMINATION AND MEDICAL FORMS

A routine history and thorough medical examination including a urinalysis is requested. Additional laboratory tests and x-rays should be ordered when required to evaluate any suspected abnormality. A tuberculosis skin test is recommended for all children; for those over 5 years a visual acuity test is desirable, as is a stool examination for those children returning from foreign areas in which intestinal parasites are prevalent. Please identify and evaluate all abnormalities.

The physician's report of his clinical and laboratory findings should be set forth in a brief written statement.

III. DISPOSITION OF REPORTS

When the examination is taken overseas, the completed medical report, any laboratory reports, x-rays or related medical documentation must be IN THE ENGLISH LANGUAGE and show the full name and date of birth of the examinee. All reports should be placed in a sealed envelope showing the name of the examinee and name of employee-parent and be marked "Privileged Medical Information", then returned to the post which requested the examination (for forwarding to the Medical Director). When the examination is taken in the United States, all medical examination documents and x-rays should show the examinee's full name, date of birth and name of employee-parent, and be sent in a sealed envelope addressed to the Medical Director, Department of State, Washington, D.C. 20520.

The Medical Director will review the reports, make a medical clearance determination and notify the interested U.S. Government office of his conclusions. The post or office requesting the examination will notify the examinee concerning his medical clearance.

IV. EXAMINATION FEES

Reimbursement of up to $15.00 will be made for each child's examination, including the urinalysis. The cost of additional laboratory tests and x-ray procedures required by the examining physician will also be reimbursed at fair rates.

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STANDARD FORM 93
JANUARY 1971
GSA FPMR 101-11.8

Approved
Office of Management and Budget No. 29-R0191

REPORT OF MEDICAL HISTORY

(THIS INFORMATION IS FOR OFFICIAL AND MEDICALLY-CONFIDENTIAL USE ONLY AND WILL NOT BE RELEASED TO UNAUTHORIZED PERSONS)

1. LAST NAME—FIRST NAME—MIDDLE NAME		2. SOCIAL SECURITY OR IDENTIFICATION NO.
3. HOME ADDRESS (No. street or RFD, city or town, State, and ZIP CODE)		4. POSITION (Title, grade, component)
5. PURPOSE OF EXAMINATION	6. DATE OF EXAMINATION	7. EXAMINING FACILITY OR EXAMINER, AND ADDRESS (Include ZIP Code)

8. STATEMENT OF EXAMINEE'S PRESENT HEALTH AND MEDICATIONS CURRENTLY USED (Follow by description of past history, if complaint exists)

9. HAVE YOU EVER (Please check each item)			10. DO YOU (Please check each item)		
YES	NO	(Check each item)	YES	NO	(Check each item)
		Lived with anyone who had tuberculosis			Wear glasses or contact lenses
		Coughed up blood			Have vision in both eyes
		Bled excessively after injury or tooth extraction			Wear a hearing aid
		Attempted suicide			Stutter or stammer habitually
		Been a sleepwalker			Wear a brace or back support

11. HAVE YOU EVER HAD OR HAVE YOU NOW (Please check at left of each item)

YES	NO	DON'T KNOW	(Check each item)	YES	NO	DON'T KNOW	(Check each item)	YES	NO	DON'T KNOW	(Check each item)
			Scarlet fever, erysipelas				Cramps in your legs				"Trick" or locked knee
			Rheumatic fever				Frequent indigestion				Foot trouble
			Swollen or painful joints				Stomach, liver, or intestinal trouble				Neuritis
			Frequent or severe headache				Gall bladder trouble or gallstones				Paralysis (include infantile)
			Dizziness or fainting spells				Jaundice or hepatitis				Epilepsy or fits
			Eye trouble				Adverse reaction to serum, drug				Car, train, sea or air sickness
			Ear, nose, or throat trouble				or medicine				Frequent trouble sleeping
			Hearing loss				Broken bones				Depression or excessive worry
			Chronic or frequent colds				Tumor, growth, cyst, cancer				Loss of memory or amnesia
			Severe tooth or gum trouble				Rupture/hernia				Nervous trouble of any sort
			Sinusitis				Piles or rectal disease				Periods of unconsciousness
			Hay Fever				Frequent or painful urination				
			Head injury				Bed wetting since age 12				
			Skin diseases				Kidney stone or blood in urine				
			Thyroid trouble				Sugar or albumin in urine				
			Tuberculosis				VD—Syphilis, gonorrhea, etc.				
			Asthma				Recent gain or loss of weight				
			Shortness of breath				Arthritis, rheumatism, or bursitis				
			Pain or pressure in chest				Bone, joint or other deformity				
			Chronic cough				Lameness				
			Palpitation or pounding heart				Loss of finger or toe	12. FEMALES ONLY: HAVE YOU EVER			
			Heart trouble				Painful or "trick" shoulder or elbow				Been treated for a female disorder
			High or low blood pressure				Recurrent back pain				Had a change in menstrual pattern

13. WHAT IS YOUR USUAL OCCUPATION?

14. ARE YOU (Check one)
☐ Right handed ☐ Left handed

93-101-01

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YES	NO	CHECK EACH ITEM YES OR NO. EVERY ITEM CHECKED YES MUST BE FULLY EXPLAINED IN BLANK SPACE ON RIGHT
		15. Have you been refused employment or been unable to hold a job or stay in school because of: A. Sensitivity to chemicals, dust, sunlight, etc.
		B. Inability to perform certain motions.
		C. Inability to assume certain positions.
		D. Other medical reasons (If yes, give reasons.)
		16. Have you ever been treated for a mental condition? (If yes, specify when, where, and give details).
		17. Have you ever been denied life insurance? (If yes, state reason and give details.)
		18. Have you had, or have you been advised to have, any operations? (If yes, describe and give age at which occurred.)
		19. Have you ever been a patient in any type of hospitals? (If yes, specify when, where, why, and name of doctor and complete address of hospital.)
		20. Have you ever had any illness or injury other than those already noted? (If yes, specify when, where, and give details.)
		21. Have you consulted or been treated by clinics, physicians, healers, or other practitioners within the past 5 years for other than minor illnesses? (If yes, give complete address of doctor, hospital, clinic, and details.)
		22. Have you ever been rejected for military service because of physical, mental, or other reasons? (If yes, give date and reason for rejection.)
		23. Have you ever been discharged from military service because of physical, mental, or other reasons? (If yes, give date, reason, and type of discharge: whether honorable, other than honorable, for unfitness or unsuitability.)
		24. Have you ever received, is there pending, or have you applied for pension or compensation for existing disability? (If yes, specify what kind, granted by whom, and what amount, when, why.)

I certify that I have reviewed the foregoing information supplied by me and that it is true and complete to the best of my knowledge.
I authorize any of the doctors, hospitals, or clinics mentioned above to furnish the Government a complete transcript of my medical record for purposes of processing my application for this employment or service.

TYPED OR PRINTED NAME OF EXAMINEE	SIGNATURE

NOTE: HAND TO THE DOCTOR OR NURSE, OR IF MAILED MARK ENVELOPE "TO BE OPENED BY MEDICAL OFFICER ONLY."
25. Physician's summary and elaboration of all pertinent data (Physician shall comment on all positive answers in items 9 through 24. Physician may develop by interview any additional medical history he deems important, and record any significant findings here.)

TYPED OR PRINTED NAME OF PHYSICIAN OR EXAMINER	DATE	SIGNATURE	NUMBER OF ATTACHED SHEETS

REVERSE OF STANDARD FORM 93

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Standard Form 88
Revised April 1964
General Services Administration
Interagency Comm. on Medical Records
FPMR 101-11.806-8

REPORT OF MEDICAL EXAMINATION

88-117

1. LAST NAME—FIRST NAME—MIDDLE NAME	2. GRADE AND COMPONENT OR POSITION	3. IDENTIFICATION NO.
4. HOME ADDRESS (*Number, street or RFD, city or town, State and ZIP Code*)	5. PURPOSE OF EXAMINATION	6. DATE OF EXAMINATION

7. SEX	8. RACE	9. TOTAL YEARS GOVERNMENT SERVICE		10. AGENCY	11. ORGANIZATION UNIT
		MILITARY	CIVILIAN		

12. DATE OF BIRTH	13. PLACE OF BIRTH	14. NAME, RELATIONSHIP, AND ADDRESS OF NEXT OF KIN
15. EXAMINING FACILITY OR EXAMINER, AND ADDRESS		16. OTHER INFORMATION
17. RATING OR SPECIALTY	TIME IN THIS CAPACITY (*Total*)	LAST SIX MONTHS

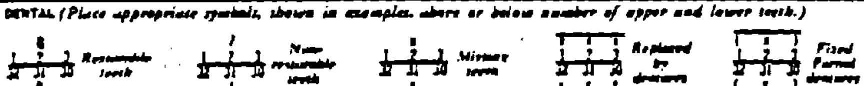
CLINICAL EVALUATION

NORMAL	(Check each item in appropriate column; enter "NE" if not evaluated.)	ABNORMAL
	18. HEAD, FACE, NECK, AND SCALP	
	19. NOSE	
	20. SINUSES	
	21. MOUTH AND THROAT	
	22. EARS—GENERAL (*Int. & ext. canals) (Auditory acuity under items 70 and 71*)	
	23. DRUMS (*Perforation*)	
	24. EYES—GENERAL (*Visual acuity and refraction under items 59, 60 and 67*)	
	25. OPHTHALMOSCOPIC	
	26. PUPILS (*Equality and reaction*)	
	27. OCULAR MOTILITY (*Associated parallel movements, nystagmus*)	
	28. LUNGS AND CHEST (*Include breasts*)	
	29. HEART (*Thrust, size, rhythm, sounds*)	
	30. VASCULAR SYSTEM (*Varicosities, etc.*)	
	31. ABDOMEN AND VISCERA (*Include hernia*)	
	32. ANUS AND RECTUM (*Hemorrhoids, fistulae) (Prostate, if indicated*)	
	33. ENDOCRINE SYSTEM	
	34. G-U SYSTEM	
	35. UPPER EXTREMITIES (*Strength, range of motion*)	
	36. FEET	
	37. LOWER EXTREMITIES (*Except feet) (Strength, range of motion*)	
	38. SPINE, OTHER MUSCULOSKELETAL	
	39. IDENTIFYING BODY MARKS, SCARS, TATTOOS	
	40. SKIN, LYMPHATICS	
	41. NEUROLOGIC (*Equilibrium tests under item 72*)	
	42. PSYCHIATRIC (*Specify any personality deviation*)	
	43. PELVIC (*Females only*) (*Check how done*) ☐ VAGINAL ☐ RECTAL	

NOTES. (*Describe every abnormality in detail. Enter pertinent item number before each comment. Continue in item 73 and use additional sheets if necessary.*)

(Continue in item 73)

44. DENTAL (*Place appropriate symbols, shown in examples, above or below number of upper and lower teeth.*)



RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	LEFT
	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	

REMARKS AND ADDITIONAL DENTAL DEFECTS AND DISEASES

LABORATORY FINDINGS

45. URINALYSIS: A. SPECIFIC GRAVITY			46. CHEST X-RAY (*Place, date, film number and result*)
ALBUMIN	D. MICROSCOPIC		
C. SUGAR			
47. SEROLOGY (*Specify test used and result*)	48. EKG	49. BLOOD TYPE AND RH FACTOR	50. OTHER TESTS

A2 p14

MEASUREMENTS AND OTHER FINDINGS

51. HEIGHT	52. WEIGHT	53. COLOR HAIR	54. COLOR EYES	55. BUILD: ☐ SLENDER ☐ MEDIUM ☐ HEAVY ☐ OBESE	56. TEMPERATURE

57. BLOOD PRESSURE (Arm at heart level)						58. PULSE (Arm at heart level)				
A. SITTING	SYS. / DIAS.	B. RECUMBENT	SYS. / DIAS.	C. STANDING (3 min.)	SYS. / DIAS.	A. SITTING	B. AFTER EXERCISE	C. 2 MIN. AFTER	D. RECUMBENT	E. AFTER STANDING 3 MIN.

59. DISTANT VISION		60. REFRACTION			61. NEAR VISION	
RIGHT 20/	CORR. TO 20/	SY	S.	CX	CORR. TO	BY
LEFT 20/	CORR. TO 20/	SY	S.	CX	CORR. TO	BY

62. HETEROPHORIA (Specify distance)

ET	XT	E. H.	L. H.	PRISM DIV.	PRISM CONV. CT	PC	PD

63. ACCOMMODATION		64. COLOR VISION (Test used and results)	65. DEPTH PERCEPTION (Test used and score)	UNCORRECTED
RIGHT	LEFT			CORRECTED

66. FIELD OF VISION	67. NIGHT VISION (Test used and score)	68. RED LENS TEST	69. INTRAOCULAR TENSION

70. HEARING			71. AUDIOMETER								72. PSYCHOLOGICAL AND PSYCHOMOTOR (Tests used and score)
RIGHT WV	/15 SV	/15		500 CPS	500 512	1000 1024	2000 2048	3000 3096	4000 4096	6000 6144	8000 8192	
LEFT WV	/15 SV	/15	RIGHT									
			LEFT									

73. NOTES (Continued) AND SIGNIFICANT OR INTERVAL HISTORY

(Use additional sheets if necessary)

74. SUMMARY OF DEFECTS AND DIAGNOSES (List diagnoses with item numbers)

75. RECOMMENDATIONS—FURTHER SPECIALIST EXAMINATIONS INDICATED (Specify)

76. A. PHYSICAL PROFILE

P	U	L	H	E	S

77. EXAMINEE (Check)

A. ☐ IS QUALIFIED FOR
B. ☐ IS NOT QUALIFIED FOR

B. PHYSICAL CATEGORY

78. IF NOT QUALIFIED, LIST DISQUALIFYING DEFECTS BY ITEM NUMBER

A	B	C	E

79. TYPED OR PRINTED NAME OF PHYSICIAN	SIGNATURE
80. TYPED OR PRINTED NAME OF PHYSICIAN	SIGNATURE
81. TYPED OR PRINTED NAME OF DENTIST OR PHYSICIAN (Federals where)	SIGNATURE
82. TYPED OR PRINTED NAME OF REVIEWING OFFICER OR APPROVING AUTHORITY	SIGNATURE / NUMBER OF ATTACHED SHEETS

U.S. GOVERNMENT PRINTING OFFICE : 1970 O—360-830

...PRINTING OFFICE: 1971—411-999

A-2 PL 15

TO BE GIVEN TO PERSON EXAMINED WITH A PRE-ADDRESSED "CONFIDENTIAL-MEDICAL" ENVELOPE.

UNITED STATES CIVIL SERVICE COMMISSION
CERTIFICATE OF MEDICAL EXAMINATION

Form Approved
Budget Bureau
No. 50-R0073

Part A. TO BE COMPLETED BY APPLICANT OR EMPLOYEE *(typewrite or print in ink)*

1. NAME *(last, first, middle)*	2. SOCIAL SECURITY ACCOUNT NO.	3. SEX ☐ MALE ☐ FEMALE	4. DATE OF BIRTH

5. DO YOU HAVE ANY MEDICAL DISORDER OR PHYSICAL IMPAIRMENT WHICH WOULD INTERFERE IN ANY WAY WITH THE FULL PERFORMANCE OF THE DUTIES SHOWN BELOW? ☐ YES ☐ NO

(If your answer is "YES" explain fully to the physician performing the examination)

6. I CERTIFY THAT ALL THE INFORMATION GIVEN BY ME IN CONNECTION WITH THIS EXAMINATION IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

(signature of applicant)

Part B. TO BE COMPLETED BEFORE EXAMINATION BY APPOINTING OFFICER

1. PURPOSE OF EXAMINATION
☐ PREAPPOINTMENT
☐ OTHER *(specify)*

2. POSITION TITLE

3. BRIEF DESCRIPTION OF WHAT POSITION REQUIRES EMPLOYEE TO DO

4. Circle the number preceding *each* functional requirement and *each* environmental factor essential to the duties of this position. List any additional essential factors in the blank spaces. Also, if the position involves law enforcement, air traffic control, or fire fighting, attach the specific medical standards for the information of the examining physician.

A. FUNCTIONAL REQUIREMENTS

1. Heavy lifting, 45 pounds and over
2. Moderate lifting, 15—44 pounds
3. Light lifting, under 15 pounds
4. Heavy carrying, 45 pounds and over
5. Moderate carrying, 15—44 pounds
6. Light carrying, under 15 pounds
7. Straight pulling (hours)
8. Pulling hand over hand (hours)
9. Pushing (hours)
10. Reaching above shoulder
11. Use of fingers
12. Both hands required
13. Walking (hours)
14. Standing (hours)
15. Crawling (hours)
16. Kneeling (hours)
17. Repeated bending (hours)
18. Climbing, legs only (hours)
19. Climbing, use of legs and arms
20. Both legs required
21. Operation of crane, truck, tractor, or motor vehicle
22. Ability for rapid mental and muscular coordination simultaneously
23. Ability to use and desirability of using firearms
24. Near vision correctable at 13" to 16" to Jaeger 1 to 4
25. Far vision correctable in one eye to 20/20 and to 20/40 in the other
26. Far vision correctable in one eye to 20/50 and to 20/100 in the other
27. Specific visual requirement *(specify)*
28. Both eyes required
29. Depth perception
30. Ability to distinguish basic colors
31. Ability to distinguish shades of colors
32. Hearing *(aid permitted)*
33. Hearing without aid
34. Specific hearing requirements *(specify)*
35. Other *(specify)*

B. ENVIRONMENTAL FACTORS

1. Outside
2. Outside and inside
3. Excessive heat
4. Excessive cold
5. Excessive humidity
6. Excessive dampness or chilling
7. Dry atmospheric conditions
8. Excessive noise, intermittent
9. Constant noise
10. Dust
11. Silica, asbestos, etc.
12. Fumes, smoke, or gases
13. Solvents *(degreasing agents)*
14. Grease and oils
15. Radiant energy
16. Electrical energy
17. Slippery or uneven walking surfaces
18. Working around machinery with moving parts
19. Working around moving objects or vehicles
20. Working on ladders or scaffolding
21. Working below ground
22. Unusual fatigue factors *(specify)*
23. Working with hands in water
24. Explosives
25. Vibration
26. Working closely with others
27. Working alone
28. Protracted or irregular hours of work
29. Other *(specify)*

Part C. TO BE COMPLETED BY EXAMINING PHYSICIAN

1. EXAMINING PHYSICIAN'S NAME *(type or print)*

2. ADDRESS *(including ZIP Code)*

3. SIGNATURE OF EXAMINING PHYSICIAN

(signature) *(date)*

IMPORTANT: After signing, return *the entire form intact* in the pre-addressed "Confidential-Medical" envelope which the person you examined gave you.

12 CP 16

☆ U.S. GOVERNMENT PRINTING OFFICE: 1963-365-377

DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES

NAME:	ECG#:	DATE ECG TAKEN:
D.O.B.: SEX:		

PURPOSE OF EXAMINATION

☐ PRE-EMPLOYMENT ☐ SEPARATION
☐ EXECUTIVE ☐ IN-SERVICE
☐ OTHER

DIAGNOSTIC PURPOSE OF EXAMINATION

☐ A. ROUTINE, NO DIAGNOSIS
☐ B. KNOWN OR SUSPECTED DIAGNOSIS:

REQUESTED BY: _____ M.D.

PATIENT DATA

HT.	WT.	B.P.	HAD PREVIOUS ECG IN MED	☐ YES	☐ NO

MEDICATION

☐ DIGITALIS ☐ QUINIDINE ☐ OTHER DRUGS _____

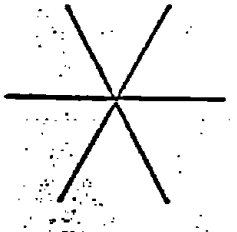
REPORT OF FINDINGS

RHYTHM OR MECHANISM

RATES
Atrial _____
Ventricular _____
Other _____

INTERVALS
P-R _____ Sec.
QRS _____ Sec.
QT _____ Sec.

VECTOR



_____ M.D.

A2p17

DEPARTMENT OF STATE CLINICAL RECORD	CONSULTATION SHEET

REQUEST

	FROM:	DATE OF REQUEST

REASON FOR REQUEST

DOCTOR'S SIGNATURE

CONSULTATION REPORT

DATE	ORGANIZATION Medical Division	SIGNATURE AND TITLE

PATIENT'S IDENTIFICATION

A a p 18

☆ U. S. GOVERNMENT PRINTING OFFICE: 1971—423—185

OFFICE OF MEDICAL SERVICES

SECTION I. DENTAL EXAMINATION

I NAME & IDENTIFYING DATA:

I X-RAYS

I A. PATHOLOGY NOTED

I 1. Inadequate Oral Hygiene
a. Generalized ☐
b. Interproximal only ☐

2. Caries

3. Periodontal Disease
Local ☐ General ☐
Moderate ☐ Severe ☐
Mobile Teeth ☐

4. Inadequate Prosthodontics
Fixed ☐ Tooth No. _____
Removable ☐

5. Missing Teeth Needing Replacement:

6. Impacted Teeth

I :ECOMMENDATIONS

1. Removable Dentures

	FULL		PARTIAL	
	U	L	U	L

2. Abnormalities of Occlusion (See Comments) →

3. Prophylaxis

4. Home Care Instruction

5. Restorations

6. Fixed Prosthesis

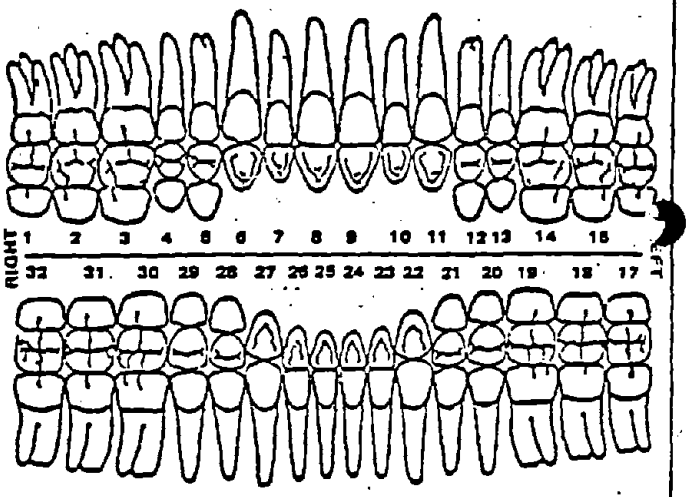
7. Removable Prosthesis

8. Endodontia

9. Biopsy

10. Impacted Teeth (periodic check)

C. CHART — USE ONLY FOR TREATMENT TO BE ACCOMPLISHED



D. ADDITIONAL COMMENTS AND RECOMMENDATIONS

Use this space for additional clarification of recommended treatment or for describing other oral pathology or treatment which does not lend itself to charting. Indicate nature of treatment and teeth or other tissues involved.

E. Office of Medical Services
Department of State
Washington, D.C. 20520

F. DATE

G. Screening Dentist

INSTRUCTIONS FOR PRIVATE DENTISTS

After completion of treatment, please comment on the reverse side as to any further diagnosis and all treatment provided to the patient. Please note that all fees for dental treatment are the personal responsibility of the patient. The Department of State provides a dental screening only and is in no way assisted in covering the cost of treatment, additional X-Rays, or further examination by private dentists.

U.S. DENTISTS: Forward the dental chart and X-Ray in the envelope provided to the Office of Medical Services, Department of State.

OVERSEAS DENTISTS: Present the chart and X-Ray to the patient. The patient will arrange to forward to the Office of Medical Services, Department of State.

A-2 p 19

(Last Name) (First) (Initial)	DOB: SSN:	Bldg. and Room No.
Agency	Job Title	Supervisor's Name	Office Phone
Home Address		Home Phone
Physician's Name	Address	Physician's Office Phone

CEHS Form CH-21 (Rev) 8 Apr 76 PATIENT INFORMATION FOR TREATMENT RECORD
Privacy Act Statement-See Reverse

1 a p 20

NAME | BADGE NO. | PLANT LOCATION

DATE	PERFORMANCE OF DUTY		DATE OF INJURY	DIAGNOSIS OR SYMPTOMS	TREATMENT AND DISPOSITION	INITIALS M.D OR NURSE
	YES	NO				

TREATMENT RECORD

For use of this form, see AR 40-5; proponent agency is Office of The Surgeon General.

DA FORM 3948 REPLACES DA FORM 8-178, 1 MAR 48, WHICH WILL BE USED.

Aapai

DATE	PERFORMANCE OF DUTY		DATE OF INJURY	DIAGNOSIS OR SYMPTOMS	TREATMENT AND DISPOSITION	INITIALS M.D. OR NURSE
	YES	NO				

A2 pa2

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974 — 534 • 684

PATIENT'S LAST NAME—FIRST NAME—MIDDLE NAME

REGISTER NO.

WARD NO.

AGE | SEX

(Check one)
☐ BEDSIDE, WHEELCHAIR, OR STRETCHER ☐ BED PATIENT ☐ AMBULATORY

EXAMINATION REQUESTED

(Above space for mechanical impression, if used)

PERTINENT CLINICAL HISTORY, OPERATIONS, PHYSICAL FINDINGS, AND PROVISIONAL DIAGNOSIS

FILM NO.	DATE OF REQUEST	REQUESTED BY

RADIOGRAPHIC REPORT

DATE OF REPORT:

SIGNATURE: (Specify location of laboratory if not part of requesting facility)

(NAME OF HOSPITAL OR OTHER MEDICAL FACILITY)

Standard Form 519-A (Rev. Aug. 1964)
Promulgated by Bureau of the Budget
Circular A — 32 (Rev.)

RADIOGRAPHIC REPORT

519-207

Aapa

ALTITUDE QUESTIONNAIRE

Inasmuch as some individuals have difficulty in living at high altitudes and may damage already impaired or diseased organs, the Medical Division attemps to screen individuals assigned to high altitude posts. As part of this examination, it is required that you fill out the questionnaire below.

Date_____

1. Name_____D.O.B._____ Sex_____

   Dependent of_____ New Assignment_____

2. Have you ever been told you have any deformity or disease of the chest and/or abnormal chest x-ray?_____. If so, please describe:_____

   _____.

3. a) Is there any history of asthma?_____. If so, when was the last attack?_____. Have you received "shots" for allergies?_____. Does asthma come on with colds?_____, emotional upset? _____, exposure to dust or pollen?_____.

   b) Do you have hay fever?_____, chronic sinusitis?_____, chronic postnasal drainage?_____.

   c) Is there a family history of allergy?_____.

   d) Do you wheeze with physical exertion?_____.

4. Have you lived at altitudes greater than 5,000 feet for any period of time?_____. Where?_____ What years?_____. Did you encounter unusual difficulties adjusting?_____.

PLEASE CONTINUE QUESTIONS ON BACK

TIMED VITAL CAPACITY REPORT

1 second VC_____%

Total VC_____Liters

% of Total _____%

Done by_____ Date_____

MED-10
rev. 7/69

A a p 24

5. Are you short of breath with exertion?_____ If yes, please specify: _____. How many flights of stairs can you climb at a normal pace without resting to catch your breath?_____. Are you active in sports?_____ If so, please specify:_____ _____. Have you noted any significant decrease in your breathing reserve in the past six months to one year?_____.

6. Do you smoke?_____cigarettes, cigars, pipe?_____. Amount?_____ Do you inhale?_____ Have you given up smoking on a doctor's advice?_____ If yes, please specify:_____ _____. How long did you smoke and how many cigarettes, cigars, pipes per day?_____.

7. Do you get chest colds more than once per year?_____. If you do get one does it last one week or more as a rule?_____. Do you have chronic bronchitis?_____. If so, do you raise sputum in the a.m.?_____. Is it discolored?_____.

8. Have you ever been told you have a heart murmur or high blood pressure? _____. Do you have chest pains or angina?_____. Have you had rheumatic fever?_____.

9. Have you ever had tuberculosis?_____. Pleurisy?_____. Pneumonia?_____. Have you ever spit up blood?_____.

10. Are you suffering from or under treatment for any illness at present? _____.

A5 p2

SPECIMEN/LAB RPT. NO

SEROLOGY

URGENCY	PATIENT STATUS
☐ ROUTINE	☐ BED ☐ AMB
TODAY ☐	OUTPATIENT ☐
☐ PRE-OP	☐ NP ☐ DOM.
STAT ☐	SPECIMEN SOURCE
	☐ BLOOD
	☐ OTHER

PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE

REQUESTING PHYSICIAN'S SIGNATURE	REPORTED BY MD / TECH	DATE	LAB ID. NO.

REMARKS:

TEST(S)	INF. MONO. QUAL.	INF. MONO. QUANT.	RPR	VDRL QUAL.	VDRL QUANT.	FTA-ABS	TA	RA	ANTI-NUCLEAR FACTOR (ANF)	COLD AGG.	ASO	CRP	SERUM COMPLEMENT	FEBRILE AGG.	COMP. FIX.	HAI
SPECIMEN TAKEN: TIME A.M./P.M. — REQUESTED (✓)																
DATE — RESULTS																

SEROLOGY
Standard Form 551 (July 1971)—GSA FPMR 101-11.6
☆GPO: 1974 OF 566-001/3-1
551-107

X-RAY INDEX CARD

FILM NUMBER

LAST NAME	FIRST NAME	MIDDLE NAME

LOCAL ADDRESS	CITY

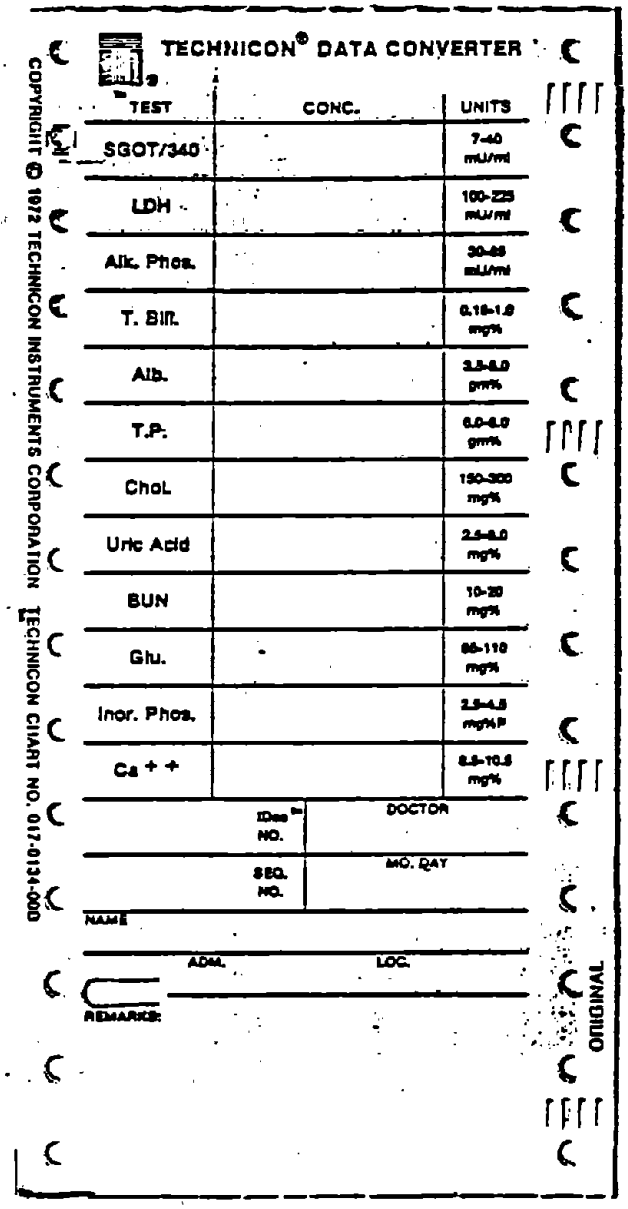
DATE OF BIRTH	HOME PHONE	OFFICE PHONE

DEPARTMENT	AGENCY BRANCH	BLDG & RM. NO.

Check if you have had: ___Pleurisy ___Pneumonia ___Tuberculosis ___Heart Trouble ___Chest Trouble ___Bronchitis ___Rheumatic Fever ___Other.	Have you ever been X-rayed here before? ___YES ___NO When?
Explain:	Have you had a Chest X-ray elsewhere? When? Where?

CHS Form CH-2 (Rev)
27 Oct 67 Patient complete this side of card only

App 26



TECHNICON® DATA CONVERTER

TEST	CONC.	UNITS
SGOT/340		7-40 mU/ml
LDH		100-225 mU/ml
Alk. Phos.		30-85 mU/ml
T. Bil.		0.15-1.0 mg%
Alb.		3.5-5.0 gm%
T.P.		6.0-8.0 gm%
Chol.		150-300 mg%
Uric Acid		2.5-8.0 mg%
BUN		10-20 mg%
Glu.		65-110 mg%
Inor. Phos.		2.5-4.5 mg% P
Ca + +		8.5-10.5 mg%

IDee™ NO.

DOCTOR

SEQ. NO.

MO. DAY

NAME

ADM.

LOC.

REMARKS:

ORIGINAL

Asp27

URINALYSIS

SPECIMEN/LAB RPT. NO.

URGENCY: ROUTINE / TODAY / PRE-OP / STAT

PATIENT STATUS: BED / AMB. / OUTPATIENT / NP / DOM.

SPECIMEN SOURCE: ROUTINE / OTHER (Specify)

Enter in above space: PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE

REQUESTING PHYSICIAN'S SIGNATURE	REPORTED BY	MD / TECH	DATE	LAB. ID. NO.

REMARKS:

TEST(S) — SPECIMEN TAKEN: DATE, TIME, AM/PM — REQUESTED / RESULTS — ROUTINE, COLOR, SPECIFIC GRAVITY, pH, GLUCOSE, PROTEIN, OCCULT BLOOD, KETONES, MICROSCOPIC, WBC, RBC, EPI CELLS, CASTS (WBC, RBC, HYALINE, GRANULAR), BACTERIA, CRYSTALS, MUCUS, BILE, URO-BILINOGEN, BENCE-JONES PROTEIN, HEMOSIDERIN, PSP, 15 MIN., 1 HR., HCG

☆ GPO: 1974—580-001/2-1 · 550-103

URINALYSIS — Standard Form 550 (July 1973)—GSA FPMR 101-11.8

HEMATOLOGY

SPECIMEN/LAB RPT. NO.

URGENCY: ROUTINE / TODAY / PRE-OP / STAT

PATIENT STATUS: BED / AMB. / OUTPATIENT / NP / DOM.

SPECIMEN SOURCE: VEIN / CAP / OTHER (Specify)

Enter in above space: PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE

REQUESTING PHYSICIAN'S SIGNATURE	REPORTED BY	MD / TECH	DATE	LAB ID. NO.

REMARKS:

TEST(S) — SPECIMEN TAKEN: DATE, TIME, AM/PM — METHOD: AUTOMATED / MANUAL — REQUESTED / RESULTS — RBC COUNT, HGB, HCT, WBC COUNT, DIFFERENTIAL (NEUTRO-PHILS, LYMPHO-CYTES, MONO-CYTES, EOSINO-PHILS, BASO-PHILS, ATYPICAL LYMPHS), PLATELETS, RETIC, SED RATE, PLATELET COUNT, BLEEDING TIME, CLOTTING TIME, P.T. CONTROL, PATIENT, P.T.T. CONTROL, PATIENT, % ACTIVITY, RATIO, SICKLING TEST, LE PREP, MCV, MCH, MCHC

☆ GPO: 1974—540-205/18-D · 549-103

HEMATOLOGY — Standard Form 549 (July 1973)—GSA FPMR 101-11.8

42p28

CHEM I

SPECIMEN/LAB RPT. NO.

URGENCY: ROUTINE / TODAY / PRE-OP / STAT

PATIENT STATUS: BED / OUTPATIENT / AMB. / NP / DOM.

SPECIMEN INTERVAL: BLOOD / OTHER (Specify)

PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE

REQUESTING PHYSICIAN'S SIGNATURE | REPORTED BY | MD / TECH | DATE | LAB. ID. NO.

REMARKS

METHOD: AUTOMATED / MANUAL

TEST(S) | SPECIMEN TAKEN: DATE, TIME, AM/PM | REQUESTED | RESULTS | GLUCOSE | UREA N | CREATININE | URIC ACID | SODIUM | POTASSIUM | CHLORIDE | CO_2 | PHOSPHATE | CALCIUM | TOTAL PROTEIN | ALBUMIN | GLOBULIN | PHOSPHATASE ALKALINE | PHOSPHATASE ACID | SGOT | LDH | CPK | BILIRUBIN (TOTAL) | BILIRUBIN (DIRECT) | BSP | CHOLESTEROL | TRIGLYCERIDES | AMYLASE | LIPASE | PROTEIN (Specify)

CHEMISTRY I

STANDARD FORM 546 (JULY 1971) — GSA (FPMR 101-11.6)

☆ GPO: 1975-0-...

546-103

MICRO-BIOLOGY I

SPECIMEN/LAB RPT. NO.

PATIENT STATUS: BED / AMB. / OUT PT / DOM. / NP

INFECTION: ADMITTED WITH / HOSPITAL ACQUIRED / PRE-OPERATIVE / POST-OPERATIVE / NON-SURGICAL / POSTPARTUM / NEWBORN / OTHER (Specify)

PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE

REQUESTING PHYSICIAN'S SIGNATURE | REPORTED BY | MD / TECH | DATE | LAB. ID. NO.

CLINICAL INFORMATION (Include Specimen Source) | ANTIBACTERIAL THERAPY

SPECIMEN TAKEN: DATE, TIME, AM/PM

EXAMINATION REQUESTED: SMEAR / CULTURE / SENSITIVITY / COLONY COUNT

REPORT:

PREDOMINANT ORGANISM(S): 1. 2.

SENSITIVITY

MICROBIOLOGY I

Standard Form 553 (July 1971)—GSA (FPMR 101-11.6)

GPO: 1975 — ...

553-103

Aspaf

SEROLOGICAL TESTS FOR SYPHILIS

Last Patient's Name First

Address

Do not write in this block

Birthdate	Race	Sex

[ ] Blood [ ] Serum [ ] Spinal fluid

[ ] Premarital (Specify State)_____
[ ] Prenatal
Test requested other than VDRL slide.
Specify: _____

VDRL SLIDE TEST
Titer dilutions

date collected

N=Nonreactive, WR=Weakly reactive, R=Reactive

Date completed

Dr. _____

SEROLOGIST

Address _____

Specimen No.

GOVERNMENT OF THE DISTRICT OF COLUMBIA – Department of Human Resources
Bureau of Laboratories

DHR-83
Formerly PH-293-24

16-

4/71
3-8299-74

STOOL SPECIMEN INSTRUCTIONS

PLEASE

1. READ INSTRUCTIONS CAREFULLY.
2. COMPLETE QUESTIONNAIRE BOTH FRONT AND BACK.
3. PRINT NAME ON CONTAINER.
4. DEFECATE DIRECTLY INTO CONTAINER.
5. BRING SPECIMEN AND COMPLETED QUESTIONNAIRE TO THE LABORATORY BEFORE 10 A.M.
6. SPECIMENS WILL NOT BE ACCEPTED AFTER 10 A.M.

MED-123
7/71

1ap30

REGISTER OR UNIT NO. | WARD NO. | ☐ BED PATIENT ☐ AMBULATORY

REQUESTED BY AND DATE | DATE AND TIME COLLECTED

CLINICAL DATA

PATIENT'S LAST NAME—FIRST NAME—MIDDLE NAME

SPECIMEN AND SOURCE

EXAMINATION REQUESTED

RESULT

DATE OF REPORT | SIGNATURE (*Specify Lab. if not part of requesting facility*)

NAME OF MEDICAL FACILITY

Standard Form 514—Rev. June 1966
Bureau of the Budget Circular A-32

MISCELLANEOUS

U.S. GOVERNMENT PRINTING OFFICE

514-100

Requested by & Date | Date & Hour Collected

Clinical Data

SERUM O.D.

	PROTEIN TOTAL
	ALBUMIN
	GLOBULIN
	A/G RATIO
	URINE SUGAR ACETONE
PATIENT'S LAST NAME—FIRST—MIDDLE—	URINE SUGAR ACETONE
FASTING BLOOD SUGAR	ALKALINE PHOSPHATASE
2 HR. P.P.	SGOT
CHOLESTEROL	SGPT
TRIGLYCERIDES	CALCIUM
B.U.N.	PHOSPHOROUS
URIC ACID	RA
CREATININE	
BILIRUBIN (TOTAL)	REMARKS
BILIRUBIN (DIRECT)	Date of Report / Signature
BILIRUBIN (INDIRECT)	
B.S.P.	Office of Medical Services, Department of State
THYMOL TURBIDITY	
CEPHALIN FLOCCULATION 48 HR.	DS-1712 1-71 BLOOD CHEMISTRY

U.S. GOVERNMENT PRINTING OFFICE 1971-412-497

A2p31

MEDICAL DIVISION DEPARTMENT OF STATE WASHINGTON, D.C. 20520

DATE OF BIRTH:

DEPENDENT OF:

AGENCY: POST:

CYTOLOGY REQUEST

DATE TAKEN

PHYSICIAN M.D.

X Check Appropriate Items if Applicable:

☐ Routine Check

☐ Amenorrhea	☐ Cyst(s)	☐ Fibroids	☐ Leukoplakia	☐ Pelvic Pains	☐ Pregnancy ____ Wks.	
☐ Cervical Erosion	☐ Dysmenorrhea	☐ Fungus	☐ Leukorrhea	☐ Polyps	☐ Pruritis	
☐ Cervical Laceration	☐ Dyspareunia	☐ Hypertrophy	☐ Hemorrhagia	☐ Post Coital Bleeding	☐ Repeat Smear	
☐ Cervicitis	☐ Endocervicitis	☐ Infertility	☐ Metrorrhagia	☐ Post Menopausal Bleeding	☐ Trichomonads	
☐ Condylomatous Gilts	☐ Endometriosis	☐ Irregular Menses	☐ Myoma(s)	☐ ____ Wks. Postpartum	☐ Vaginitis	Other ____

DAY L.M.P.	Previous Cytology ☐ Yes ☐ No	Class	Grav.	Para.

TREATMENT: (include dates)

HORMONES	RADIATION	SURGERY

CYTOLOGY INTERPRETATION

CLASSIFICATION	RECOMMENDATION
NEGATIVE	
SUSPICIOUS	
CYTOLOGIC CRITERIA FOR MALIGNANCY PRESENT	
REPEAT CYTOLOGY	

...logic findings should never be interpreted as conclusive evidence of ...cy, but rather as a diagnostic aid which must be supplemented ...e diagnosis.

Reported By:

FORM DS-1661 11-67

1 ap 32

☆ U.S. Government Printing Office 1974—537-312

PATIENT'S LAST NAME—FIRST NAME—MIDDLE NAME	REGISTER NO.	WARD NO.

AGE	SEX	(Check one)
		☐ BEDSIDE, WHEELCHAIR, OR STRETCHER ☐ BED PATIENT ☐ AMBULATORY

EXAMINATION REQUESTED

(Above space for mechanical imprinting, if used)

PERTINENT CLINICAL HISTORY, OPERATIONS, PHYSICAL FINDINGS, AND PROVISIONAL DIAGNOSIS

FILM NO.	DATE OF REQUEST	REQUESTED BY

RADIOGRAPHIC REPORT

DATE OF REPORT:

SIGNATURE: (Specify location of laboratory if not part of reporting facility)

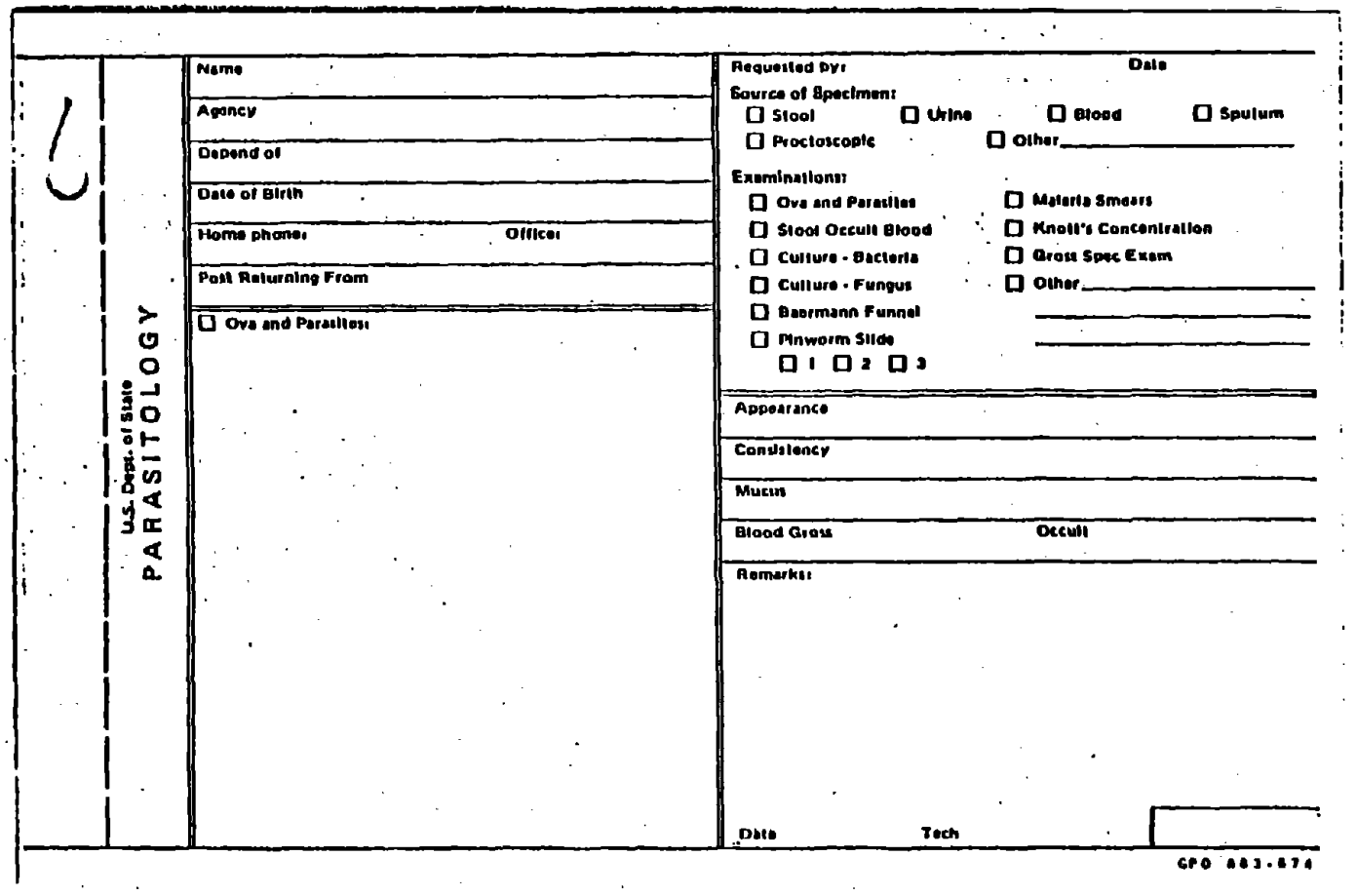
(Name of hospital or other medical facility)

Standard Form 519-A (Rev. 4-74)
Prescribed by Bureau of the Budget
Circular A-32 (Rev.)

RADIOGRAPHIC REPORT

519-207

A a p 33



U.S. Dept. of State

PARASITOLOGY

Name

Agency

Depend of

Date of Birth

Home phone: Office:

Post Returning From

☐ Ova and Parasites:

Requested By: Date

Source of Specimen:

☐ Stool ☐ Urine ☐ Blood ☐ Sputum

☐ Proctoscopic ☐ Other_____

Examinations:

☐ Ova and Parasites ☐ Malaria Smears

☐ Stool Occult Blood ☐ Knott's Concentration

☐ Culture - Bacteria ☐ Gross Spec Exam

☐ Culture - Fungus ☐ Other_____

☐ Baermann Funnel _____

☐ Pinworm Slide _____

☐ 1 ☐ 2 ☐ 3

Appearance

Consistency

Mucus

Blood Gross Occult

Remarks:

Date Tech

GPO 883-874

App 34

DEPARTMENT OF STATE

INSTRUCTIONS FOR PARASITIC EXAMINATION

cardboard container for collecting the specimen, and a paper bag to be used for carrying it in may be obtained from the Laboratory. No specimen will be accepted unless it is in the proper container with the proper lid that is issued at the Laboratory (Room 29A14). PRINT YOUR FULL NAME ON THIS LID.

DO NOT TAKE LAXATIVES OR CATHARTICS IN ORDER TO OBTAIN A SPECIMEN. A glycerine suppository may be used.

Bring a morning specimen to the Laboratory, Room 29A14 as soon as possible after passage, but before 10:00 a.m. NO SPECIMEN WILL BE ACCEPTED AFTER 10:00 a.m.

If you have a positive specimen, you will be notified within 48 hours, and arrangements will be made for further diagnostic study and/or therapy. You will NOT be notified if the results are negative. Please DO NOT call us regarding the results of the stool specimen examinations. Every effort will be made to notify persons found to have parasites before they leave Washington, D.C. Treatment will be provided at the Medical Division when possible.

PLEASE USE BALL POINT PEN FOR CLARITY and complete the following carefully so that we can quickly locate you in Washington, or at your home leave address, to arrange for any needed treatment.

1. YOUR NAME (Print) (Last) (First) (Middle)	DATE

2. YOUR STATUS:

I AM AN EMPLOYEE OF (Name of Agency)	(Regional Bureau or Area)	PASA: Yes ☐ No ☐
OR I AM A DEPENDENT OF (Print Name)		
WHO IS AN EMPLOYEE OF (Name of Agency)	(Regional Bureau or Area)	PASA: Yes ☐ No ☐

IF DEPENDENT, YOUR RELATIONSHIP TO EMPLOYEE IS: ☐ Spouse ☐ Other (specify)	4. YOUR DATE OF BIRTH	5. YOUR SEX: 1 ☐ Male 2 ☐ Female
6a. WASHINGTON ADDRESS WHERE YOU CAN BE REACHED	b. DEPARTURE DATE	c. PHONE NUMBER
d. ADDRESS WHERE YOU CAN BE REACHED ON HOME LEAVE		e. EDA: EDD:

f. WHERE DO YOU WANT YOUR REPORT SENT:

☐ Home Leave Address ☐ Former Post ☐ New Post ☐ Washington Desk

g. LIST IN CHRONOLOGICAL ORDER ALL OF THE COUNTRIES OUTSIDE OF THE U.S. THAT YOU HAVE VISITED FOR A MONTH OR LONGER DURING THE PAST TWO YEARS. START WITH THE MOST RECENT, SHOWING MONTH AND YEAR OF ARRIVAL AND DEPARTURE:

POST/COUNTRY	DATE OF ARRIVAL	DATE OF DEPARTURE
1.		
2.		
3.		
4.		
6.		

FORM 6-69 DS-1501

PLEASE FILL OUT BACK OF FORM

FORM DS-1501 6-69 Page 2

SURVEY QUESTIONNAIRE

10. IN THE COUNTRY IN WHICH YOU SPENT MOST TIME DURING THE PAST TWO YEARS:

a. Did you have native domestic help or servants? 1 ☐ Yes 2 ☐ No

b. If yes, did they prepare your meals? 1 ☐ Always 2 ☐ Occasionally 3 ☐ Never

c. Source of water supply 1 ☐ City piped 2 ☐ Well 3 ☐ Spring 4 ☐ Other

11. DO YOU THINK YOUR PRESENT HEALTH IS:

1 ☐ Better than two years ago
2 ☐ Same as two years ago
3 ☐ Worse than two years ago

12. HAVE YOU EVER BEEN TOLD YOU HAD:

a. Enlarged liver? 1 ☐ Yes 2 ☐ No
b. Hepatitis? 1 ☐ Yes 2 ☐ No
c. Jaundice? 1 ☐ Yes 2 ☐ No

13a. DID YOU HAVE FREQUENT LOOSE BOWEL MOVEMENTS FOR PERIODS LASTING MORE THAN FOUR DAYS DURING YOUR OVERSEAS STAY?

1 ☐ Yes 2 ☐ Occasionally 3 ☐ No

b. IF YES, did you ever notice blood in the loose stools? 1 ☐ Yes 2 ☐ No

14a. HAVE YOU EVER PASSED WORMS IN YOUR STOOLS?

1 ☐ Yes 2 ☐ No

b. IF YES: 1 ☐ During past two years
2 ☐ Prior to two years ago
3 ☐ Both during and prior

15a. WERE YOU EVER TOLD YOU HAD PARASITES?

1 ☐ Yes 2 ☐ No

b. IF YES: 1 ☐ During past two years
2 ☐ Prior to two years ago
3 ☐ Both during and prior

16. WERE YOU EVER TOLD YOU HAD AMEBIASIS? 1 ☐ Yes 2 ☐ No

a. IF YES: 1 ☐ During past two years
2 ☐ Prior to two years ago
3 ☐ Both during and prior

b. Was the diagnosis based on a stool examination?
1 ☐ Yes 2 ☐ No

c. Were you treated for amebiasis?
1 ☐ Yes 2 ☐ No
If yes, where: 1 ☐ Washington
2 ☐ Elsewhere

17. DURING THE PAST TWO YEARS DID YOU HAVE:

a. Frequent abdominal pain? 1 ☐ Yes 2 ☐ No

b. Excessive gas or distension? 1 ☐ Yes 2 ☐ No

18a. ARE YOU CURRENTLY TAKING ANY DRUGS OR MEDICINE? 1 ☐ Yes 2 ☐ No

b. IF YES, what are they?

DO NOT WRITE BELOW THIS LINE

REPORT

☐ POSITIVE ☐ NEGATIVE ☐ REPEAT

☐ A. ENDAMOEBA HISTOLYTICA
☐ B. DIENTAMOEBA FRAGILIS
☐ C. GIARDIA LAMBLIA
☐ D. TRICHURIS TRICHIURA
☐ E. ENDOLIMAX NANA
☐ F. ASCARIS LUMBRICOIDES
☐ G. CHLONORCHIS SINENSIS
☐ H. CHILOMASTIX MESNILI
☐ I. TAENIA SAGINATA
☐ J. ENTAMOEBA COLI
☐ K. IODAMOEBA BUTSCHLII
☐ L. TRICHOMONAS HOMINIS
☐ M. ENTEROBIUS VERMICULARIS
☐ N. STRONGYLOIDES STERCORALIS
☐ O. SCHISTOSOMA
☐ P. NECATOR AMERICANUS OR ANCYLOSTOMA
☐ Q. TRICHOSTRONGYLUS

CULTURE

GROSS SPECIMEN

REMARKS

U. S. GOVERNMENT PRINTING OFFICE : 1969 O - 345-330 (150)

A3p36

DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES
REPORT OF EXERCISE ELECTROCARDIOGRAM

NE:

ECG NO.: | DATE OF EXERCISE:

- ☐ FOR DIAGNOSIS
- ☐ EVALUATION FOR EXERCISE PROGRAM
- ☐ EXECUTIVE EXAMINATION
- ☐ OTHERS (STATE):

D.O.B. SEX:

AGE: HEIGHT: WEIGHT: RESTING B.P.:

STATE OF HEALTH: ☐ NO DISEASE OR LIMITATIONS.
☐ CARDIOVASCULAR OR SYSTEMIC DISEASE. (STATE):

☐ NON-SMOKER. LAST SMOKING: _____ HRS: LAST MEAL _____ HRS PRIOR.

☐ NO DRUGS. LAST DRUG(S): STATE DRUG(S) AND TIME TAKEN:

PROTOCOL OF EXERCISE (DETERMINED BY MONITORING PHYSICIAN)

TYPE OF EXERCISE:
TWO STEP: ☐ DOUBLE: ☐ OTHERS (NO. TRIPS AND TIME) _____ MAX. H.R. _____
TREADMILL: ☐ SINGLE STAGE ☐ MULTISTAGE TARGET HEART RATE _____

STAGE(S)	SPEED (MPH)	GRADE (%)	TIME (MIN)	COMPLETED YES	COMPLETED NO	H.R.	B.P.	SYMPTOMS AND ECG CHANGES

RESULTS: ☐ SATISFACTORILY COMPLETED TEST. ☐ INCOMPLETE TEST
☐ TERMINATED PRIOR TO REACHING TARGET HEART RATE (STATE REASON)

ECG CHANGES AND INTERPRETATION:

_____ M. D.

FORM 8-70 M-276a

REPORT OF EXERCISE ELECTROCARDIOGRAM

FOR EXERCISE TESTING OF THE APPARENTLY HEALTHY SUBJECT

In order to determine an appropriate plan of medical management, I hereby consent to voluntarily engage in an exercise test to determine the state of my heart and circulation. The information thus obtained will help my physician in advising me as to the activities in which I may engage.

Before I undergo the test, I will have an interview with a physician. I will also be examined by a physician to determine if I have any condition which would indicate that I should not engage in this test.

The test which I will undergo will be performed on a treadmill with the amount of effort increasing gradually. This increase in effort will continue until symptoms such as fatigue, shortness of breath, or chest discomfort may appear, which would indicate to me to stop.

During the performance of the test, a physician or his trained observer will keep under surveillance may pulse, blood pressure and electrocardiogram.

There exists the possibility of certain changes occurring during the tests. They include abnormal blood pressure, fainting, disorders of heart beat, too rapid, too slow or ineffective, and very rare instances of heart attack. Every effort will be made to minimize them by the preliminary examination and by observations during testing. Emergency equipment and trained personnel are available to deal with unusual situations which may arise.

The information which is obtained will be treated as privileged and confidential and will not be released or revealed to any person without my expressed written consent. The information obtained, however, may be used for a statistical or scientific purpose with my right of privacy retained.

I have read the foregoing and I understand it and any questions which may have occurred to me have been answered to my satisfaction.

SIGNED _____
Patient

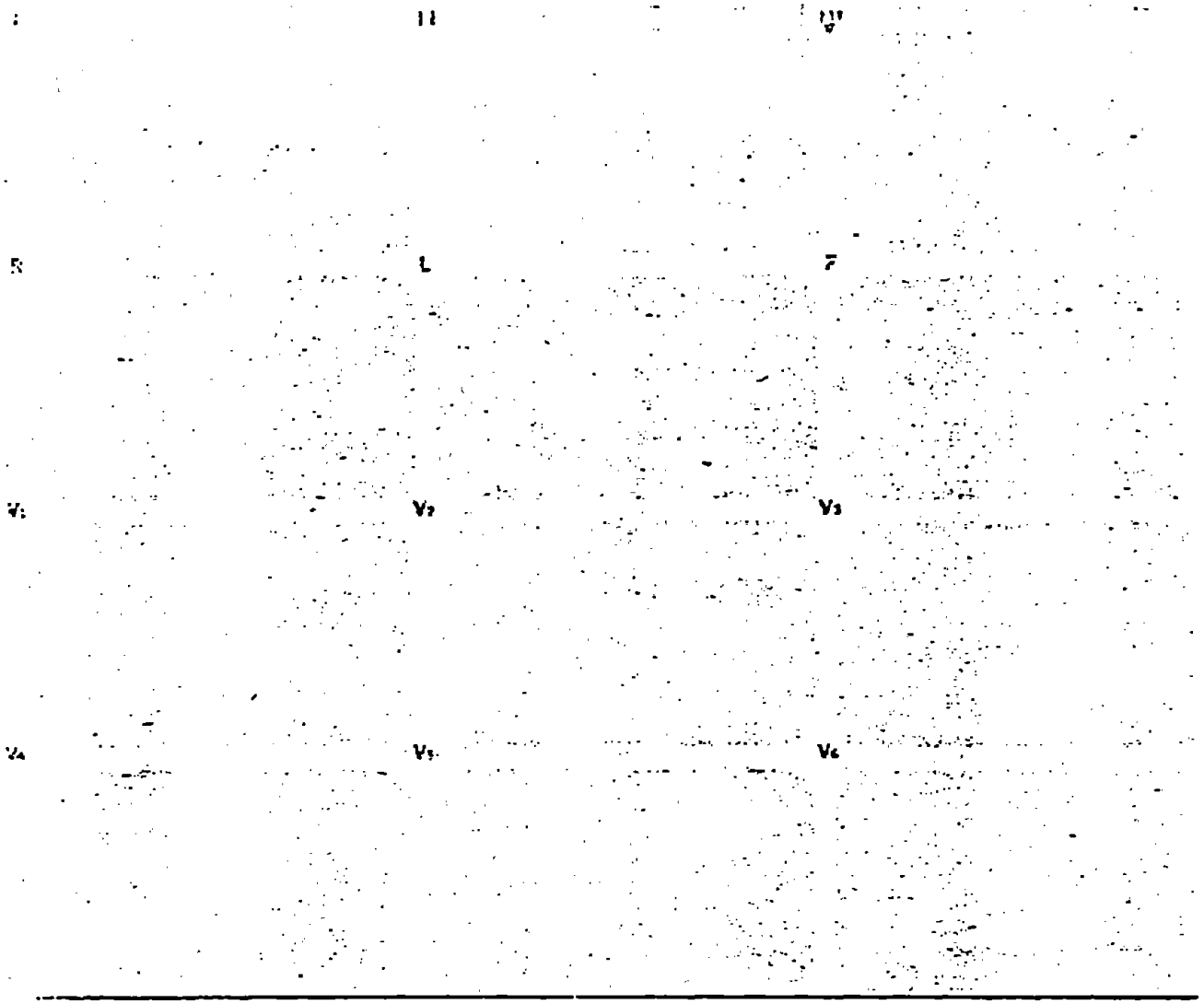
_____
Witness

_____
Date

_____
Physician Supervising the Test

Office of Medical Services

Aap38



ELECTROCARDIOGRAPH REQUEST

PREV. ECG YES☐ NO☐ AMB.☐ RED.☐ EMERG.☐ DIG.☐ QUIN.☐ AGE SEX B.P. DATE

CLIN. DIAG.: ORDERED BY

ELECTROCARDIOGRAPH REPORT

RHYTHM: SINUS☐ OTHER:

RATES:		INTERVALS:			AXIS:
AVR.	VENTR.	P–R	QRS	QT$_c$	+ 0 — 0

DESCRIPTION:	LIMB LEADS	PRECORDIAL LEADS
P		
QRS		
S-T		
T, U		

INTERPRETATION, SERIAL CHANGES, IMPLICATIONS:

PATIENT'S IDENTIFICATION

INTERPRETED BY

ECG NO. WARD RM.

DATE

ECG FILE ONLY

Table II

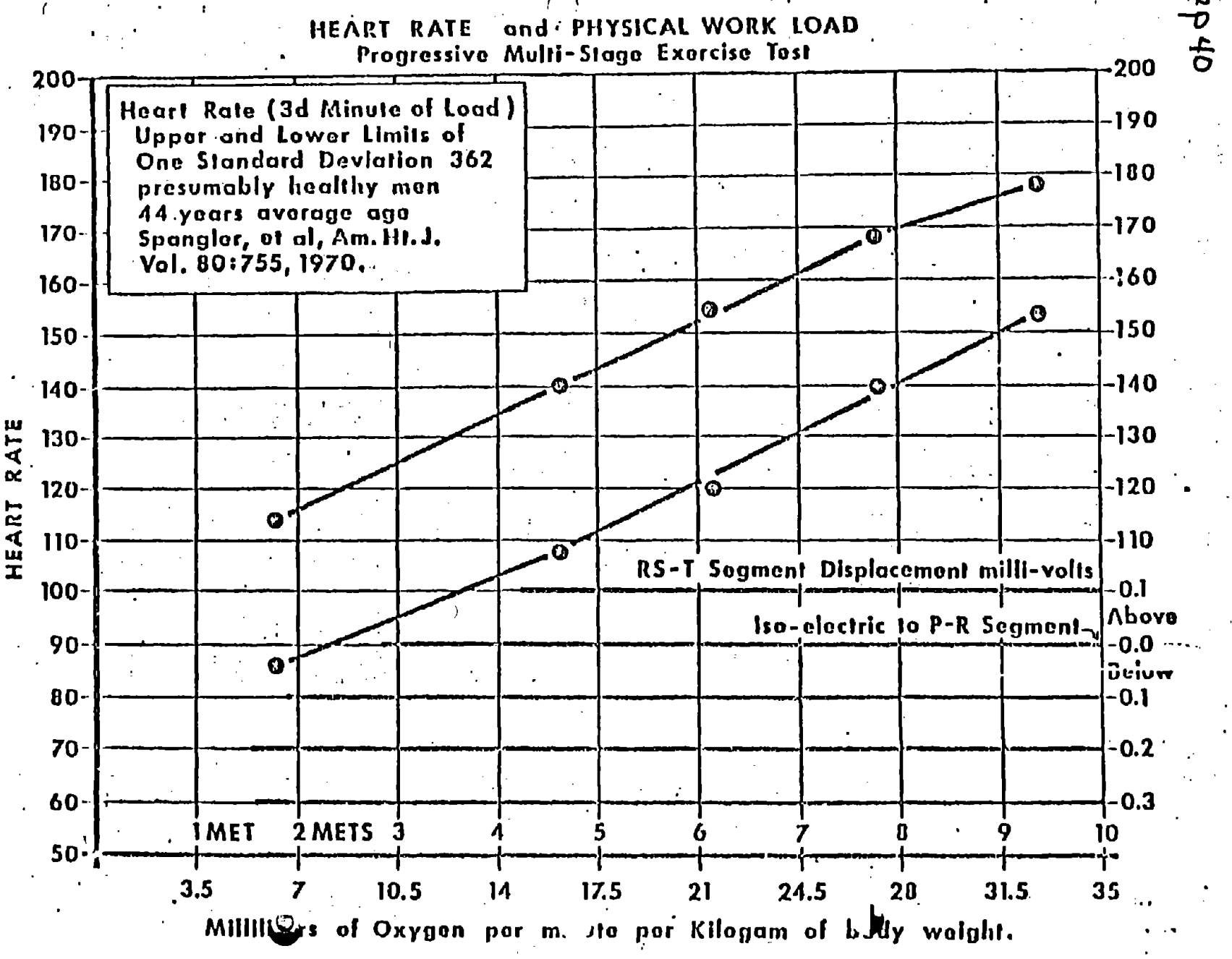
METABOLIC MULTIPLES (METS) REQUIRED BY VARIOUS ACTIVITIES*

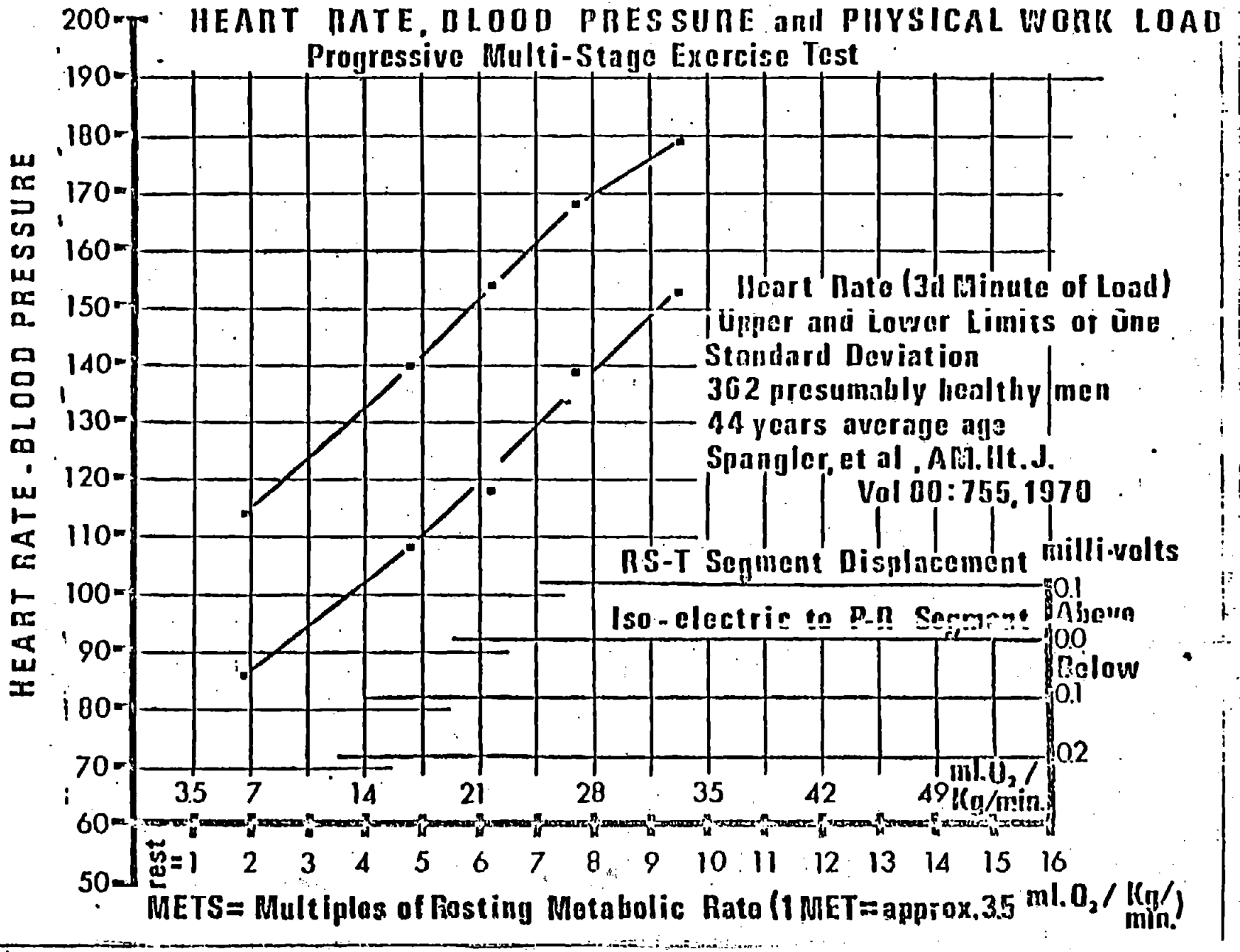
Adapted from the table of Dr. Bruno Balke, The Aspen Health Center
Aspen, Colorado

Activity \ METS	3	4	5	6	7	8	9	10	11	1
Table Tennis	x	x	Increasing demands with increasing skill and duration of rallies							
Golf		Pull cart	Carry clubs							
Badminton	x	x	x	As with table tennis						
Volley Ball	x	x	x	x	x	x	As above			
Tennis		Social Doubles		Singles		Competitive				
Squash or Handball		x	x	x	x	x	Competetive			
Walking (Speed in MPH)	3	3½	4							
Walking/Jogging		x	x	x						
Jogging/Running (MPH)				x	5	5½	6	7	8	9
Skating			x	x	x	x	x	x		
Rope Skipping		x	x	x	x	x	x	x		
Skiing - Cross Country			x	x	x	x	x	x	x	x
Mountain Hiking		x	x	x	x	x	x	x		
Horseback Riding		x	Trot	x	Gallop					
Calisthenics, Games, etc.	x	x	x	x	x					
Dynamic Weight Work			x	x						
Water Skiing			x	x	x					
Dancing	x	x	x	x	x	x				
Cycling (Speed in MPH)	4	6	8	10	12	13	14	15		
Rowing		x	x	x	x	x	x	x	x	x
Swimming	x	x	x	x	x	x	Competitive			

* All intensities increase with commitment or competitiveness of appro

App 40


HEART RATE and PHYSICAL WORK LOAD
Progressive Multi-Stage Exercise Test
Heart Rate (3d Minute of Load)
Upper and Lower Limits of
One Standard Deviation 362
presumably healthy men
44 years average age
Spangler, et al, Am. Ht. J.
Vol. 80:755, 1970.
HEART RATE
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
RS-T Segment Displacement milli-volts
Iso-electric to P-R Segment
0.1 Above
0.0
Below
0.1
0.2
0.3
1 MET
2 METS
3
4
5
6
7
8
9
10
3.5
7
10.5
14
17.5
21
24.5
28
31.5
35
Milliliters of Oxygen per minute per Kilogram of Body weight.


HEART RATE, BLOOD PRESSURE and PHYSICAL WORK LOAD
Progressive Multi-Stage Exercise Test
HEART RATE - BLOOD PRESSURE
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
Heart Rate (3d Minute of Load)
Upper and Lower Limits of One Standard Deviation
362 presumably healthy men
44 years average age
Spangler, et al , AM. Ht. J.
Vol 80: 755, 1970
RS-T Segment Displacement
milli-volts
Iso-electric to P-R Segment
0.1 Above
0.0
0.1 Below
0.2
ml. O2 / Kg/min.
35 7 14 21 28 35 42 49
rest = 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
METS= Multiples of Resting Metabolic Rate (1 MET = approx. 3.5 ml. O2 / Kg/ min.

App H

A = p42

Symptoms

ECG File Only

DEPARTMENT OF STATE
MEDICAL DIVISION
CARDIOLOGY BRANCH
CORONARY HEART DISEASE
RISK LEVEL EVALUATION

Framingham Probability (per 10 of Developing C.H. in six years

Date

NAME _____ BIRTH DATE _____

RELATIVE LEVEL OF RISK

RISK FACTOR	Very Low	Low	Moderate	High	Very High
Blood Pressure					
Systolic	Less than 110	120	130 140	150 160	170 180
Diastolic	Less than 70	76	82 88	94 100	106 110
Cigarettes	Never-None in 1 yr	5/day	10 20	30 40	50 60
Chemistries					
Cholesterol	Less than 160,180	200	220 240	260 280	300+
Triglycerides	Less than 80	100	150	200	300+
Fasting Glucose	Less than 80	90	100 110	120 130	140
Uric Acid	Less than 5.0	6.0	7.0	8.0	9+
Urea Nitrogen	Less than 14	16	20	24	28
Relative Weight	Less than 1.0	1.2	1.3	1.4	1.6+
Physical Activity Minutes above 5 METS/week	More than 240	180	120	60	Less than 30
Penetrating Stress/Tension	Almost never	Occasional	Frequent		Nearly Constant
Depression Depth	Almost never Minimal	Occasional Moderate	Frequent Deep		Nearly Constant Very Deep
Coffee (cups/day)	0 2	3 4	5 6 7	8	10+
Tea	0 2	3 4	5 6 7	8	10+
Cola	0 2	3 4	5 6 7	8	10+
Alcohol (oz./day)	0 2	3 4	5 6 7 8	10	12+
Wine/Beer (glasses/day)	0 2	3 4	5 6 7 8	10	12+
Electrocardiogram	_____				
Family History of Heart Attack	None	1 Blood Relative	2	3	4 or more

Father
" Parents
" Brothers/Sisters
Mother
" Parents
" Brothers/Sisters

Patient's " / "
Children

FOR CARDIOLOGY USE ONLY

REPORT OF EXERCISE ELECTROCARDIOGRAM

A2p43

NAME:

ECG NO.: DATE OF EXERCISE:

- ☐ FOR DIAGNOSIS
- ☐ EVALUATION FOR EXERCISE PROGRAM
- ☐ EXECUTIVE EXAMINATION
- ☐ OTHERS (STATE):

B. SEX:

AGE: HEIGHT: WEIGHT: RESTING B.P.:

STATE OF HEALTH: ☐ NO DISEASE OR LIMITATIONS.
☐ CARDIOVASCULAR OR SYSTEMIC DISEASE. (STATE):

☐ NON-SMOKER. LAST SMOKING: _____ HRS: LAST MEAL _____ HRS PRIOR.

☐ NO DRUGS. LAST DRUG(S): STATE DRUG(S) AND TIME TAKEN:

PROTOCOL OF EXERCISE (DETERMINED BY MONITORING PHYSICIAN)

TYPE OF EXERCISE:

TWO STEP: ☐ DOUBLE: ☐ OTHERS (NO. TRIPS AND TIME) _____ MAX. H. R. _____

TREADMILL: ☐ SINGLE STAGE ☐ MULTISTAGE TARGET HEART RATE _____

STAGE(S)	SPEED (MPH)	GRADE (%)	TIME (MIN)	COMPLETED YES	COMPLETED NO	H.R.	B.P.	SYMPTOMS AND ECG CHANGES

__ Satisfactory completed test. __ Incomplete Test __ Terminated prior to reaching target heart rate.

POST EXERCISE ECGS: Recumbent B.P.

2 Min.:

5 Min.:

10 Min.:

Changes: (encircle and describe)

Rhythm: Sinus maintained; Sinus with dysrhythmia; Replaced by dysrhythmia

Conduction: Unchanged Abn AV Abn Vent Type:

S-T Alterations: Contour only; (ischemic) Plus downward displacement STR. _____ Mv

Plus downward displacement DSL _____ Mv

Near Ischemic (slow upslope) downward displacement _____ Mv at _____ sec.

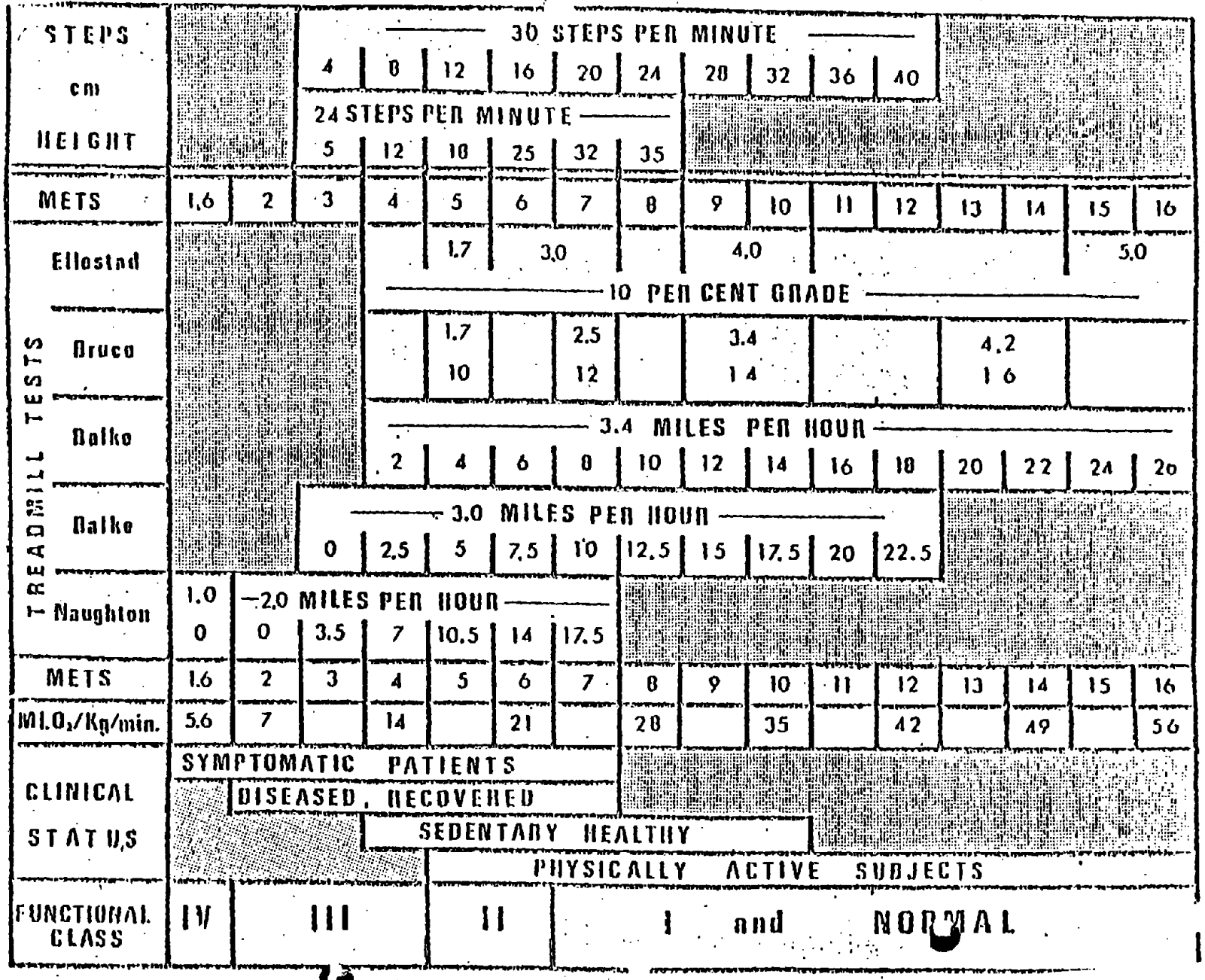
J point only

Injury Contour _____ Mv upward displacement

* Isolated T wave changes - leads

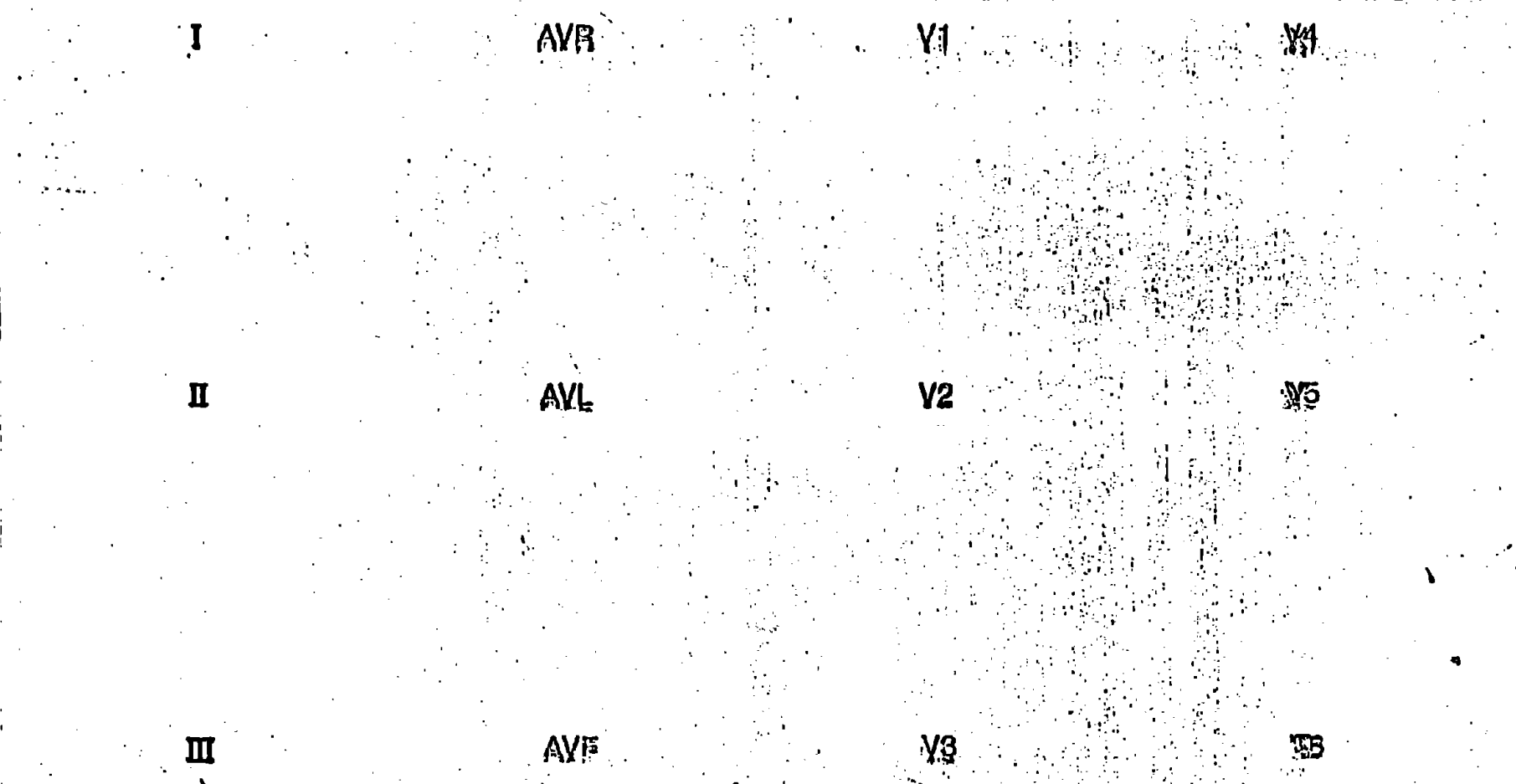
Technician

Monitoring Physician


STEPS
cm
HEIGHT
30 STEPS PER MINUTE
4 8 12 16 20 24 28 32 36 40
24 STEPS PER MINUTE
5 12 18 25 32 35
METS
1.6 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
TREADMILL TESTS
Ellestad
1.7 3.0 4.0 5.0
10 PER CENT GRADE
Bruce
1.7 2.5 3.4 4.2
10 12 14 16
Balke
3.4 MILES PER HOUR
2 4 6 8 10 12 14 16 18 20 22 24 26
Balke
3.0 MILES PER HOUR
0 2.5 5 7.5 10 12.5 15 17.5 20 22.5
Naughton
1.0
0
2.0 MILES PER HOUR
0 3.5 7 10.5 14 17.5
METS
1.6 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Ml.O2/Kg/min.
5.6 7 14 21 28 35 42 49 56
CLINICAL STATUS
SYMPTOMATIC PATIENTS
DISEASED, RECOVERED
SEDENTARY HEALTHY
PHYSICALLY ACTIVE SUBJECTS
FUNCTIONAL CLASS
IV
III
II
I and NORMAL

NAME: _____ AGE: _____ ADM. NO: _____ TIME: _____ ECG NO: _____

VENT. RATE: _____ VENT. RATE: _____ PR INT: _____ QRS: _____ DOCTOR: _____



A&P 48

HEWLETT-PACKARD ECG RECORD ENVELOPE 9220-0174

GRAPH HOLTER

AGE _____ SEX _____ HT _____ WT _____ BP _____ OCCUPATION _____ WARD _____ PATIENT _____

DOCTOR _____ PATIENT NUMBER _____ DIGITALIS YES ☐ NO ☐ QUINIDINE YES ☐ NO ☐ YES ☐ NO ☐ DATE _____ ECG NO _____

AURIAL RATE _____ P-R INTERVAL _____ VENTRICULAR RATE _____ Q-R-S INTERVAL _____ Q-T INTERVAL _____ S-T SEGMENT _____ ELEC. AXIS _____

RHYTHM _____ P WAVES _____ T WAVES _____

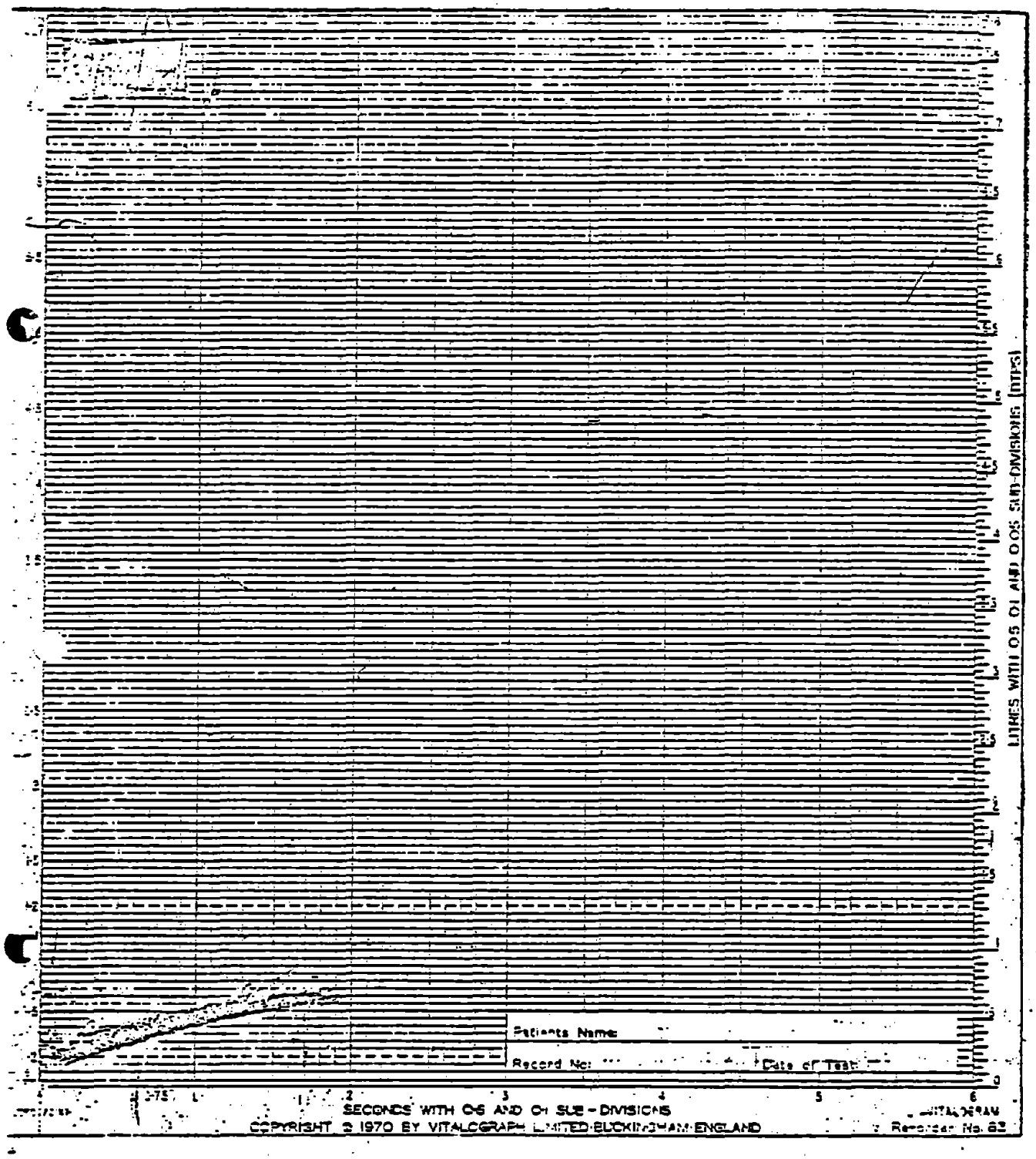
REMARKS _____

PATIENT / NUMBER

ADDITIONAL INFORMATION OVER ☐

LEADS I-2-3	AVR-AVL-AVF	V_1-V_2-V_3	V_4-V_5-V_6	CAL. 1MV

A2p47



A2048

NAME OF EXAMINEE	DOB	DATE OF CLEARANCE

NAME OF EMPLOYEE	EXAMINED ☐ DEPT. ☐ OTHER	PRE-EMPLOYMENT ☐	IN-SERVICE ☐	SEPARATION ☐

SOCIAL SECURITY NO.	AGENCY	PRESENT POST	NEXT POST

An evaluation of the examinee's current medical condition, in light of Foreign Service medical standards, indicates that the examinee is medically:

☐ 1. Cleared for full Foreign Service duty.

☐ 2. Cleared for Foreign Service duty at a post with adequate medical facilities.*

☐ 3. Cleared for Foreign Service duty at low altitude post with adequate medical facilities.*

☐ 4. Cleared for Foreign Service duty at low altitude post.*

☐ 5. Not cleared for any overseas duty.

☐ 6. Cleared for _____

☐ 7. Pending further examination or treatment as follows:

- ☐ a. Receipt of Supplemental Medical Information.
- ☐ b. Correction of Medical Problem.
- ☐ c. Other:

☐ 8. _____

☐ 9. Cleared for Separation.

*Proposed Post _____

☐ Is Acceptable ☐ Is not

REMARKS:

FORM 6-70 DS-823

DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES
MEDICAL CLEARANCE

1. Copy For Examinee

☆ U.S. Government Printing Office: 1976—599-478

Aep49

☆ U.S. GOVERNMENT PRINTING OFFICE: 1963-365-377

DEPARTMENT OF STATE
OFFICE OF MEDICAL SERVICES

NAME:	ECG#:	DATE ECG TAKEN:
D.O.B.: SEX:		

PURPOSE OF EXAMINATION

☐ PRE-EMPLOYMENT ☐ SEPARATION
☐ EXECUTIVE ☐ IN-SERVICE
☐ OTHER

DIAGNOSTIC PURPOSE OF EXAMINATION

☐ A. ROUTINE, NO DIAGNOSIS
☐ B. KNOWN OR SUSPECTED DIAGNOSIS:

REQUESTED BY: _____ M.D.

PATIENT DATA

HT.	WT.	B.P.	HAD PREVIOUS ECG IN MED	☐ YES	☐ NO

MEDICATION

☐ DIGITALIS ☐ QUINIDINE ☐ OTHER DRUGS _____

REPORT OF FINDINGS

RHYTHM OR MECHANISM

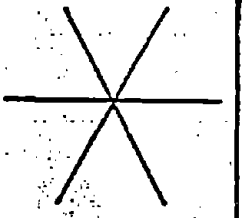
RATES

Atrial _____
Ventricular _____
Other _____

INTERVALS

P-R _____ Sec.
QRS _____ Sec.
QT _____ Sec.

VECTOR



_____ M.D.

App 50

DEPARTMENT OF STATE CLINICAL RECORD	CONSULTATION SHEET

REQUEST

TO:	FROM:	DATE OF REQUEST

REASON FOR REQUEST

DOCTOR'S SIGNATURE

CONSULTATION REPORT

DATE	ORGANIZATION	SIGNATURE AND TITLE
	Medical Division	

PATIENT'S IDENTIFICATION

FORM 4-63 DS-1531a

N P

A3-p1

Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

1 2 3 4 5 6	7 8	9	10
Study Number	Card No.	POST	EMPLOYER

POST: 1. Moscow; 2. Budapest, Leningrad, Prague, Warsaw; 3. Belgrade, Bucharest, Sofia, Zagreb

EMPLOYER: 1. State; 2. Army; 3. Navy; 4. AF; 5. USMSG; 6. USIA; 7. FAS; 8. Def/Civ; 9. OP&M/DOD

1. NAME

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	26 27 28 29 30 31 32 33 34 35 36	37
(LAST)	(FIRST)	MIDDLE INITIAL

MIDDLE NAME AND/OR ADDITIONAL NAME INFORMATION

SEX (38): 1. Male 2. Female

3. DATE OF BIRTH (39 40 MONTH, 41 42 DAY, 43 44 YEAR) (9's for not recorded)

4. SOCIAL SECURITY NUMBER (46 47 48 49 50 51 52 53 54) (9's for not recorded)

5. LEGAL RESIDENCE (STATE) (55 56)

6. SERIAL NUMBER (57 58 59 60 61 62 63 64 65 66)

7. DATE OF SEPARATION (67 68 MONTH, 69 70 DAY, 71 72 YEAR)

8. EDUCATION (73 74)

Education: _____

Name of School _____

Years completed: _____

9. STATUS (75): 1. Active; 2. Retired; 3. Separated/Resigned; 4. Deceased

: _____ (Place & Date of Death)

10. MARITAL STATUS (76): 1. Single; 2. Married; 9. Unknown

11. ABSTRACTOR CODE (77)

11a. SOURCE (78)

12. DATE ABSTRACTED

13. EMPLOYEE, DEPENDENT CODE (79)

14. ACTI CODE (80)

11/16/77

Form 2.1 R_2
SRC Abstract

13 p2

Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

FAMILY HISTORY AND TRACING INFORMATION

Study # _____

1. NAME _____ SSN _____

2. MOST RECENT ADDRESSES

   a. Post _____

   b. Home _____

   c. Next of kin _____

   _____

3. FAMILY HISTORY (From most recent exam)

   a. Spouse
   - ☐ 1 = Yes, living
   - ☐ 2 = Yes, dead
   - ☐ 3 = Not married
   - ☐ 4 = Not specified

   b. Number Sibs ☐☐

   c. Children
   ☐☐ Number Living
   ☐☐ Number Dead (If dead:)

Cause	Age

4. OCCUPATION: _____

5. DEPENDENTS:

Name	Relationship	DOB	Record Stat

A3 p3

Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

1	2	3	4	5	6	7	8	9	10
Study Number						Card No.		Exam No.	

1. NAME

2. DATE

Month		Day		Year	

Last First Middle

COMPLETE # 3-7 FOR 1ST PHYSICAL EXAM ONLY

3. DATE OF BIRTH

Month			Day		Year			

4. PLACE OF BIRTH _____ ☐☐

5. SEX ☐
1 = Male
2 = Female

6. COLOR ☐
1 = White
2 = Black
3 = Other _____

7. DEPENDENT ☐
1 = No
2 = Yes (Specify) : _____
Name of Employee

8. PURPOSE OF EXAM ☐
1 = Pre-employment
2 = Direct transfer
3 = Separation
4 = TDY to: _____ for _____ (Period)
5 = Inservice or Home Leave
6 = Other (Specify): _____

9. NAME OF AGENCY
_____
(If PASA Case)

10. POST ASSIGNMENT
Last Post: _____ EDD _____
New Post: _____ EDA _____

11. EXAMINEE'S PRESENT HEALTH ☐ Good If other than "good", specify _____

_____

_____

_____

Form 3.1 (p.1 of 2)
Medical History & Exam Abstract
10/28/76

43 p4

12. HEALTH SINCE LAST EXAMINATION (Form 264 only) 0 = No 1 = Yes

a. Previously examined? ☐ If 1, _____ (date)

b. Been hospitalized or medically evaluated? ☐ If 1, specify: _____

c. Developed any significant medical problems? ☐ If 1, specify: _____

d. Copy anything mentioned under item 15f.

13. GENERAL MEDICAL HISTORY - ATTACH FORM 13a (Note date and exam number where applicable)

14. DISEASE HISTORY - ATTACH FORM 14a (Note date and exam number where applicable)

15. CLINICAL EVALUATION (Complete this item for every exam.)

ATTACH FORM 16a TO RECORD ABNORMALITIES.

☐ Check if all normal ☐ Same as exam # _____ Date _____

16. SIGMOIDOSCOPIC ☐ Normal ☐ Not Performed (Specify any abnormality) _____

17. SUMMARY INFORMATION: _____

18. SIGNIFICANT OR INTERVAL HISTORY ☐ None (Specify) _____

A3 p5

COMPLETE # 19-20 FOR 1ST AND LAST EXAMS ONLY

19. HEIGHT _____ ☐ Cm. ☐ In.

20. WEIGHT _____ ☐ Kg. ☐ Lbs.

21. TEMP. _____

22. BLOOD PRESSURE (Arm at heart level)

Sitting	Recumbent	Standing
____/____	____/____	____/____
Sys. Dias.	Sys. Dias.	Sys. Dias.

23. PULSE (Arm at heart level)

Sitting	After exercise	2 min. after	Recumbent	After standing 3 min.
_____	_____	_____	_____	_____

24. DISTANT VISION

20/____ - 20/____
Right Left

Corrected to:
20/____ - 20/____
Right Left

25. REFRACTION
By _____ S._____ CX____
By _____ S._____ CX____

26. NEAR VISION: Right _____ Corr. to_____ By_____
Left _____ Corr. to_____ By_____

27. HETEROPHORIA (Specify distance)

ES°_____ EX°_____ R.H._____ L.H._____ Prism Div._____ Prism Conv._____ PC_____ PD_____

28. ACCOMODATION
Right _____
Left _____

29. COLOR VISION
(Test used & result)
_____

30. DEPTH PERCEPTION:
(Test used & score)
_____

Uncorrected __
Corrected __

31. FIELD OF VISION
_____

32. NIGHT VISION
(Test used & score)
_____

33. RED LENS
_____

34. INTROCULAR TEN

Right	Lef
_____	_____

A3 p6

35. HEARING

Right WV _____/15 SV _____/15

Left WV _____/15 SV _____/15

36. AUDIOMETER

	250 256	500 512	1000 1024	2000 2048	3000 2896	4000 4096	00 92
Right							
Left							

37. PSYCHOLOGICAL & PSYCHOMOTOR (Tests used & score) _____

_____

38. EXAMINING PHYSICIAN (If agency, note name of agency.)

Name _____ Address _____

_____

Name _____ Address _____

_____

Name _____ Address _____

_____

39. ABSTRACTOR _____ 40. DATE ABSTRACTED _____

ADDITIONAL INFORMATION (If necessary, attach Form 3.7: Additional Information)

Diagnoses, Treatments, X-Rays, etc.	Date	Source

Notes, remarks:

A3 p7

Study #

13 a. GENERAL MEDICAL HISTORY

☐ Check here if all "NO".

If "YES", note date and exam #, and specify.

Date	Exam #		Specify:
		a. Ever treated self for illness?	
		b. Any other serious illness or injury?	
		c. Ever consulted clinics, physicians, etc.?	
		d. Operations?	
		e. Mental treatment?	
		f. Ever denied life insurance?	
		g. Ever rejected for military service?	
		h. Ever medically discharged from military?	
		i. Compensation for existing disability?	
		j. Ever unable to hold job due to: sensitivity to chemicals, dust, etc.?	
		inability to perform certain motions?	
		inability to assume certain positions?	
		other medical reasons? Specify:	
		k. Ever worked with radioactive substances?	
		l. Ever had difficulty with school studies or teachers?	

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Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

NAME	PLACE	DATE REQUESTED	DATE RECEIVED	DATE RETURNED	COMMENTS

Form 3.3
Medical History Requests
9/23/76

A3 p4

14a. DISEASE HISTORY

Study #

☐ Check if all "No"

	Item #		Specify
		Appendicitis	
		Arthritis/rheumatism	
		Artificial eye	
		Asthma	
		Attempted suicide	
		Back pain	
		Bed wetting	
		Bloody or tarry stools	
		Boils	
		Bone, joint, other deformity	
		Brace, back support	
		Car, train, sea, air sickness	
		Chronic cough/coughing blood	
		Chronic, frequent colds	
		Cramps in legs	
		Depression, excessive worry	
		Diabetes	
		Diphtheria	
		Dizziness, fainting spells	
		Drug or narcotic habit	
		Ear, nose, throat trouble	
		Epilepsy or fits	
		Excessive bleeding after injury/ tooth extraction	
		Excessive drinking habit	
		Eye trouble/visual defect	
		Foot trouble	
		Frequent indigestion	
		Frequent/painful urination	
		Frequent/severe headaches	
		Frequent/terrifying nightmares	
		Frequent trouble sleeping	
		Gall bladder trouble/gall stones	
		Glasses	
		Goiter	
		Hallucinogenic drug or marijuana	
		Hay fever/allergies	
		Hearing aid	
		High/low blood pressure	
		Homosexual tendencies	
		Jaundice/hepatitis	
		Kidney stone/blood in urine	
		Lameness	
		Loss of arm, leg, finger, toe	
		Loss of memory, amnesia	

A3 p10

Date	Exam #		Specify:
		Malaria/amoebic dysentery/ tropical disease	
		Mumps	
		Nervous trouble of any sort	
		Neuritis	
		Painful/trick shoulder/elbow/knee	
		Pain, pressure in chest	
		Palpitation/pounding heart	
		Paralysis (incl. infantile)	
		Piles/rectal disease	
		Reaction to drug, serum, etc.	
		Recent gain/loss of weight	
		Rheumatic fever	
		Running ears	
		Rupture/hernia	
		Scarlet fever, erysipelas	
		Severe tooth, gum trouble	
		Shortness of breath	
		Sinusitis	
		Skin disease	
		Sleep walking	
		Soaking sweats	
		Stomach/liver/intestinal trouble	
		Stutter/stammer habitually	
		Sugar/albumin in urine	
		Swelling of feet/ankles	
		Swollen, painful joints	
		Tuberculosis, etc.	
		Tumor/growth/cyst/cancer	
		Venereal disease	
		Whooping cough	
		Other:	
		FEMALES ONLY:	
		Been pregnant	
		Complication of pregnancy	
		Vaginal discharge	
		Painful/irregular menses	
		Any female disorders	

A 3 p 11

Exam # Study #

16a. CLINICAL EVALUATION

(0 = Normal, 1 = Abnormal)

a. Head, face, neck and scalp?
☐ If 1, describe: _____

b. Nose and sinuses?
☐ If 1, describe: _____

c. Mouth and throat?
☐ If 1, describe: _____

d. Ears - including otoscopic (auditory acuity - #51 on new form)?
☐ If 1, describe: _____

e. Eyes - including ocular motility, pupillary reaction and opthalmoscopic (Visual acuity - #50 on new form)?
☐ If 1, describe: _____

f. Lungs and chest (include breasts)?
☐ If 1, describe: _____

g. Heart (thrust, size, rhythm, sounds)?
☐ If 1, describe: _____

h. Vascular system (varicosities, etc.)?
☐ If 1, describe: _____

i. Abdomen and viscera (including hernia)?
☐ If 1, describe: _____

j. Anus and rectum (hemorrhoids, fistulae, condition of prostate)?
☐ If 1, describe: _____

k. Endocrine system?
☐ If 1, describe: _____

l. G-U system?
☐ If 1, describe: _____

m. Extremeties (strength, range of motion)?
☐ If 1, describe: _____

A3p 12

n. Spine, other musculoskeletal?

☐ If 1, describe: _____

o. Identifying body marks, scars, tattoos?

☐ If 1, describe: _____

p. Skin, lymphatics?

☐ If 1, describe: _____

q. Neurologic?

☐ If 1, describe: _____

r. Psychiatric (specify any personality deviation)?

☐ If 1, describe: _____

s. Pelvic (indicate if done rectally: _____)?

☐ If 1, describe: _____

NAME: STUDY NO.:

	Date Exam#	Date Exam#	Date Exam#	Date Exam#	Date Exam#	Date Exam#
Urinalysis:						
S.G.						
Sugar						
Alb.						
Micro.						
Other						
Serology:						
Test						
Result						
Test						
Result						
ECG						
Result						
(If abnormal, note results on back)						
Pap Smear						
Result						
Hematocrit						
WBC						
Diff:						
Neut.						
Lymph.						
Mono.						
Eosin.						
Baso.						
Blood Sugar						
Cholesterol						
Uric Acid						
Other						
Chest X-Ray						
Result						

A3p13

.DDITIONAL INFORMATION A3-p-13A

STUDY NUMBER

Diagnoses, Treatments, X-Rays, etc.	Date	Source

Form 3.7
Additional Information
?/16/76

A3 p.1

FSHSS

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

1	2	3	4	5	6	7	8	9	10		

Study Number Card No. Exam No.

1. NAME _____
Last First Middle

2. DATE OF EXAM ____ ____ ____
Month Day Year

3. DEPENDENT OF _____
Last Name First Middle

4. AGENCY _____

5. EXAMINEE'S CURRENT MAILING ADDRESS
_____
_____
_____

6. DATE OF BIRTH ____ ____ ____
Month Day Year

7. HEIGHT ____ ☐ Cm. ☐ In.

8. WEIGHT ____ ☐ Kg. ☐ Lb.

9. SEX ☐ 1 = Male 2 = Female

10. EXAMINING PHYSICIAN(S) (If agency, note name of agency.)

Name _____ Address _____
_____

Name _____ Address _____
_____

Form 3.9
Medical Exam Abstract: Dependent Under Age 12
12/1/76

A-3p15

11. PHYSICIAN'S SUMMARY OF HISTORY AND EXAM

12. URINALYSIS

13. STOOL

14. TUBERCULOSIS TEST

15. VISUAL ACUITY: Right _____ Corrected _____

Left _____ Corrected _____

(Visual) Other _____

16. ADDITIONAL LABS; X-RAYS - (Specify)

A-3p 1c

10/28/76

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

ABSTRACTING OF MEDICAL RECORDS

Medical records will be abstracted for employees stationed in Moscow from 1953 through June 30, 1976 and employees stationed at other selected embassies (Budapest, Leningrad, Prague, Warsaw, Belgrade, Bucharest, Sofia, and Zagreb) from records and microfilm on file at the Office of Medical Records, Division of Medical Services, Department of State for current Department of State employees and at National Personnel Records Center, St. Louis, Missouri, for separatees (retired, resigned, or deceased employees), dependents (age 21 and over) of current employees, and former dependents (e.g., a divorced wife) of current employees.

The largest proportion of medical abstracts will be derived from Standard Form 88, "Report of Medical Examination", and Standard Form 89, "Report of Medical History", used by Department of State prior to 1967 to record information regarding employees' periodical physical exams, and from Optional Form 264, "Medical History and Examination for Foreign Service", used after 1967, with a smaller proportion derived from earlier versions of medical exam forms used by Department of State. Information relative to the physical exams will also be obtained from sources on file other than the above mentioned forms, such as examining physician's notes, lab reports, etc.

INSTRUCTIONS FOR ABSTRACTING MEDICAL RECORDS:

Form 3.0: Family History and Tracing Information

1. Name - (#1 on Forms 88, 89, 264)

   Copy entire Name from medical records (last name first) including initials, maiden name, and any additional information, such as Jr., Sr., etc.

4-Sep 17

Study No. - Record 6-digit Study Number assigned each subject.

SSN - Copy Social Security Number from tag at bottom of inside back cover of folder.

2. Most Recent Addresses -

a. Post - (#8 on Form 264)

Note most recent Post Address from most recent exam in folder. Search all forms in folders to obtain most recent post address.

b. Home - (#4 on Forms 88, 89; #18 on Form 264)

Note most recent Home Address from most recent exam.

c. Next of Kin - (#14 on Forms 88 and 89)

Note Next of Kin and most recent Next of Kin Address. Search all forms in folder to obtain a Next of Kin Address.

(Addresses may be found on various forms attached inside front cover of folder.)

3. Family History - (#18 on Form 89; #12 on Form 264)

a. Spouse - Note appropriate code in blocks according to information given under Family History regarding Spouse.

b. Sibs - Note number of Sibs according to information given under Family History regarding Brothers and Sisters.

Form 3.1: Medical History and Exam Abstract

Study No. - Record 6-digit Study Number at top of page.

Card No. - Do not complete this item.

Exam No. - Sequence all exams within folder, beginning with the date of the earliest exam. Assign "01" to earliest exam, "02" to next exam, etc. NOTE: If a number of exams within a folder are abstracted and it is then discovered that the exam numbers are out of sequence (e.g., if a more recent exam is abstracted and numbered before an earlier exam not yet abstracted), correctly re-number exams so that the proper sequence is preserved. Check all exams for correct

A3 p18

sequence of exam dates and exam numbers after each folder is completed.

1. Name - (#1 on Forms 88, 89, 264)

   Record entire Name (last name first, then first name, and middle or maiden name).

2. Date - (#6 on Forms 88 and 89; #3 on Form 264)

   Date here = date of exam. Record month, day, and year of exam (e.g., 01/01/76 or 11/11/75). Be sure to include entire Date. If date or portion of date is missing, see date of examining physician's signature (final item of Form 89 immediately following #40; #63 on Form 264). If (after searching entire set of exam forms for some indication of date of exam) date is unknown or a portion is missing, code as 9's. Note year (if possible) and any indication as to when exam took place.

NOTE: Complete #3-7 for first physical exam only.

3. Date of Birth - (#12 on Forms 88 and 89; #4 on Form 264)

   Record month, day, and last 3 digits of year.

4. Place of Birth - (#13 on Forms 88 and 89; #5 on Form 264)

   Note city and state when given.

5. Sex - (#7 on Forms 88 and 89; #6 on Form 264)

   Code 1 for "Male", 2 for "Female".

6. Color - (#8 on Forms 88 and 89)

   Code 1 for "White", 2 for "Black", and 3 for "Other". If "Other", specify.

7. Dependent - (#11 on Form 264)

   Code 1 for No, i.e., if examinee is Department of State employee and <u>not</u> a dependent of Department of State employee. Code 2 for Yes, i.e., if examinee <u>is</u> a dependent of a Department of State employee; record entire name of that employee.

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8. Purpose of Exam - (#5 on Forms 88 and 89; #7 on Form 264)
Note appropriate code according to information given regarding Purpose of Exam. If TDY, specify place and time period. If "Other", specify.

9. Name of Agency - (#10 on Forms 88 and 89; #9 on Form 264)
Note Name of Agency if P.A.S.A. case, i.e., if other than Department of State.

10. Post Assignment - (See attached green sheet for Forms 88 and 89; #10 on Form 264)
Record Last Post, E.D.D., New Post, and E.D.A.

11. Examinee's Present Health - (#17 on Form 88; #14 on Form 264)
Check block for "Good" if examinee states he is "in good health" (or words to that effect) or if his notes under this item do not indicate otherwise. Specify complaints, etc. if examinee's present health is other than "Good".

12. Health Since Last Exam - (#15 on Form 264)
Code 0 for "No", 1 for "Yes" for 12a-c. If 1, specify date and all necessary information. Record anything given under 15f on Form 264.

13. General Medical History - (#27-39 on Form 89; #16a-i on Form 264)
Attach Form 13a. GENERAL MEDICAL HISTORY. Note study number at top of page. Use 1 copy of Form 13a for all exams, i.e., 1 form per examinee. It is unlikely that all items (a-l on Form 13a) will be answered in the negative for all exams, but check block if all "No". Note all exam numbers where condition appears; note only date of exam at which condition is first mentioned, e.g.:

43p20

Date	Exam #		
4-3-68	1-4-7	a. Ever...?	Specify:

Specify any additional information in space provided for each item. If dates do not coincide with exam numbers, indicate under "Specify".

14. Disease History - (#20-22 on Form 89; #17-18 on Form 264)

Attach Form 14a. DISEASE HISTORY. Note study number at top of page. Use 1 copy of Form 14a for all exams, i.e., 1 form per examinee. If all items are answered in the negative for all exams, check block for all "No". Regarding chronic or recurrent conditions, or conditions that may vary from exam to exam, note all exam numbers where condition appears; note only date of exam at which condition is first mentioned, e.g.:

Date	Exam #		
4-3-68	1-4-7	Backpain	Specify:

Specify additional information in space provided for each item. If dates do not coincide with exam numbers, indicate under "Specify". Record under "Other" any condition not listed on Form 14a, and specify.

15. Clinical Evaluation - (#18-43 on Form 88; #22-40 on Form 264)

NOTE: Complete this item for every exam. Check block if all "Normal". If Clinical Evaluation for a particular exam is same as that of previous exam, check block for "Same as....."; specify number and date of that previous exam. Attach Form 16a. CLINICAL EVALUATION to record abnormalities. Use as many copies

of Form 16a as necessary per examinee, i.e., 1 copy of Form 16a per exam at which abnormalities are noted under Clinical Evaluation. Note exam number and study number at top of page. Code 0 for "Normal", 1 for "Abnormal". If 1, describe abnormality.

16. Sigmoidoscopic - (#42 on Form 264)
Check appropriate block for "Normal" or "Not Performed". Specify any abnormality.

17. Summary Information - (Physician's Summary - #40 on Form 89; Summary of Defects and Diagnoses - #74 on Form 88, #61 on Form 264; Recommendations - #75 on Form 88, #62 on Form 264)
Record all ("Summary") Information as given by examining physician under the above-mentioned items. If there is repetition of complaint/condition within a single exam, record all information pertinent to that complaint only once in that exam. If there is repetition of complaint/condition from exam to exam, refer to the first exam where the same complaint/condition appeared by noting "Same as exam #_____." If any change in complaint/condition is indicated, specify that difference.

18. Significant or Interval History - (#73 on Form 88; #43 on Form 264)
Check block if "None". Record <u>all</u> information given under this item.

NOTE: Complete #19-20 for first and last exams only.

19. Height - (#51 on Form 88; #45 on Form 264)
Record Height and check appropriate block for "cm." or "in."

20. Weight - (#52 on Form 88; #46 on Form 264)
Record Weight and check appropriate block for "kg." or "lbs."

A3px

21. Temperature - (#56 on Form 88)

Record Temperature as given.

22. Blood Pressure (Arm at heart level) - (#57 on Form 88; #48 on Form 264)

Record Blood Pressure (systolic/diastolic): Sitting, Recumbent, and Standing. Be sure to record all values given.

23. Pulse (Arm at heart level) - (#58 on Form 88)

Record Pulse: Sitting, After exercise, 2 min. after, Recumbent, and After standing 3 min. Record all values given.

24. Distant Vision - (#59 on Form 88; #50 on Form 264)

Record values for uncorrected and corrected Distant Vision (right and left). Be sure to record all values given.

25. Refraction - (#60 on Form 88)

Record all information given under Refraction.

26. Near Vision - (#61 on Form 88)

Record all information given under Near Vision.

27. Heterophoria - (#62 on Form 88)

Record all values for ES°, EX°, R.H., L.H., Prism Div., Prism Conv., PC, and PD as given.

28. Accomodation - (#63 on Form 88)

Record all information as given for both right and left eyes.

29. Color Vision - (#64 on Form 88)

Record name of test used and result as given.

30. Depth Perception - (#65 on Form 88)

Record name of test used and score (uncorrected and corrected) as given.

31. Field of Vision - (#66 on Form 88)

Record all information as given.

32. Night Vision - (#67 on Form 88)

Record name of test used and score as given.

33. Red Lens - (#68 on Form 88)

Record all information as given.

34. Intraocular Tension - (#69 on Form 88; #49 on Form 264)

Record all information as given for both right and left eyes.

35. Hearing - (#70 on Form 88; #51 on Form 264)

Record all values (right and left) as given.

36. Audiometer - (#71 on Form 88)

Record all information as given.

37. Psychological and Psychomotor - (#72 on Form 88)

Record tests used, score, and all information as given.

38. Examining Physician - (#15 and 79-81 on Form 88; #15 and final item on Form 89; #63 on Form 264)

Record name of Examining Physician (as typed or printed) and entire address. If agency is given instead of or in addition to name of physician, note name of agency.

39. Abstractor - Initial after completing and checking history and exam abstract.

40. Date Abstracted - Date abstract after completing history and exam abstract.

Additional Information -

Record all Additional Information, e.g., diagnoses by personal physicians during interval between physical exams at Department of State, treatments, X-rays, hospitalizations, etc. Note dates and source of all information recorded. Attach Form 3.7: Additional Information, if more space is needed.

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Notes, remarks: - Note any explanation or comments pertaining to the medical records abstracted.

Form 3.6: Lab Data

(#45-50 on Form 88; #52-60 on Form 264; attached lab slips)

Record all Lab Data as given on exam forms or from lab slips attached to exam forms. Include results of all tests performed in relation to all physicals at Department of State and elsewhere, all hospitalizations, and all additional lab tests given in examinee's folder.

Note examinee's name and study number at top of page. Record date of lab report and exam number to which lab work corresponds at top of each column. If dates of lab reports differ by a few days or weeks, but pertain to a single exam (e.g., urinalysis performed the day after the physical exam and EKG taken 10 days later), assign the same exam number to all lab work pertaining to that exam, but note the different report dates at top of each block of tests.

NOTE: Do not record Lab Data relative to intestinal parasitic diseases, e.g., repeat stools for intestinal parasites, cultures for amoebic dysentery, etc. Record "ALD" in "Other" block(s) under appropriate date(s) to indicate that this additional Lab Data is contained in exam report, but not abstracted.

Use as many copies of Lab Data forms per examinee as necessary. If a test is not performed or not reported, mark X through that block. Mark a large N through a test block to indicate "Normal" or "Negative". In the case of abnormal EKG's, note diagnosis on reverse side of form. Check that each test block is completed and that all lab work is recorded, except that mentioned in the paragraph above.

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Form 3.7: Additional Information

Note study number at top of page.

Record all Additional Information such as diagnoses by personal physicians during interval between physical exams at Department of State, treatments, X-rays, hospitalizations, etc. Note dates and source of all information recorded.

Use as many copies of Additional Information forms per examinee as necessary.

In General:

Note full name and study number on first sheet; note last name and study number on each subsequent sheet. (Record name until study number is assigned.)

If any item or portion of item is not completed (i.e., left blank) on Forms 88, 89, 264, etc. mark X through corresponding item or portion of item on exam abstract.

Foreign Service
Health Status
Survey

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12/9/76

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

INSTRUCTIONS FOR ABSTRACTING MEDICAL EXAMS OF DEPENDENTS UNDER AGE 12 (FORM 3.8)

In General:

Note full name and first 4 digits of study number on all exam abstract sheets.

If any item or portion of item is not completed, or if a lab test is not performed or not reported (i.e., left blank on the Medical Examination form), mark X through corresponding item or portion of item on exam abstract.

Record Social Security Number of examinee/dependent (when given) above examinee's name. Note: Do not record Social Security Number of employee if no Social Security Number is given for his dependent, although the employee's Social Security Number appears on dependent's folder.

Study Number -

Record first 4 digits of study number of employee whose dependent is the examinee.

Card Number -

Do not complete this item.

Exam Number -

Sequence all exams within folder, beginning with the date of the earliest exam. Assign "01" to earliest exam, "02" to next exam, etc.
Note: If a number of exams within a folder are abstracted and it is then discovered that the exam numbers are out of sequence (e.g., if a more recent exam is abstracted and numbered before an earlier exam not yet abstracted), correctly re-number exams so that the proper sequence is preserved. Check all exams for correct sequence of exam dates and Exam Numbers after each folder is completed.

1. Name -

Record examinee's entire Name (last name first, then first name, and middle name).

2. Date of Exam -

Record month, day, and year of exam using 6 digits (e.g., 01/01/76 or 11/11/76). Be sure to include entire Date. If Date or portion of Date is missing, code as 9's; note year (if possible) and any indication as to when exam took place.

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3. Dependent of _____ -

Record entire name (last name first, then first name, and middle name) of employee whose dependent is the examinee.

4. Agency -

Note name of Agency as given.

5. Examinee's Current Mailing Address -

Record entire Address as given.

6. Date of Birth -

Record month, day, and last 3 digits of year.

7. Height -

Record Height and check appropriate block for "cm." or "in."

8. Weight -

Record Weight and check appropriate block for "kg." or "lb."

9. Sex -

Code 1 for "Male", 2 for "Female".

10. Examining Physician(s) -

Record name(s) of Examining Physician(s) and entire address. If agency is given instead of or in addition to name of physician(s), note name of agency.

11. Physician's Summary of History and Exam -

Record all information as given by examining physician.

If there is repetition of complaint/condition within a single exam, record all information pertinent to that complaint/condition only once under the item. If there is repetition of complaint/condition from exam to exam, refer to the first exam where the same complaint/condition appeared by noting "Same as exam #_____ (fill in exam #)." If any change in complaint/condition is indicated, specify that difference as given by examining physician.

12. Urinalysis -

Record results as given.

13. Stool -

Record "ALD" to indicate that Additional Lab Data regarding stool examinations is contained in exam report, but do not abstract lab results if given under this item.

Foreign Service
Health Status
Survey

A3p28

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

Procedure for Processing Psychiatric Records

1. When a medical record is abstracted and there is either a psychiatric record attached (inactive records) or a psychiatric record indicated by a blue sheet (active records), a 'P' is marked in the upper left hand corner of the completed abstract by the abstractor.
2. When a completed abstract (marked with a 'P') is checked off on the Medical Record Request List (Form 3.3), a red 'P' is marked in the far right hand margin next to the study number.
3. From the Medical Record Request List (Form 3.3) all names (with their corresponding study numbers) with a red 'P' are listed on Form 8.1 (Request for Psychiatric Evaluation) "Active" or "Inactive", lot number is also entered under 'Comments".
4. From the Form 8.1 list, a charge-out slip (MED-19) is filled out for each name and charged to Dr. Haynes. The charge-out slip will also indicate active or inactive with lot number.
5. When the charge out slips are given to Dr. Haynes, the date they are given is entered in the column marked 'Date Sent' on Form 8.1.
6. For inactive records, Dr. Haynes will give the charge-out slips to Lois Daris when he is ready to do the abstracting and she will get the records for him. He will also return records to her when he is finished with them.
7. For active records.?
8. When the completed psychiatric abstract is returned to us, the date returned is entered in column marked 'Date Returned' on Form 8.1 .

   By this method, all handling of actual records will be done by Dr. Haynes and Lois Daris.

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Foreign Service
Health Status
Survey

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

Date of Exam

1 2 3 4 5 6	7 8	9 10	11 12 13 14 15 16
Study Number	Card Number	Exam No.	Month Day Year

Purpose of Exam

- ☐ Routine, administrative
- ☐ Psychiatric problem
- ☐ Other

1. Patient's Name

Last First Middle

2. Was person medically evacuated?

☐ No ☐ Yes, specify:

3. Check any of the following symptoms mentioned:

a. ☐ Depression
b. ☐ Anxiety
c. ☐ Asthenic Syndrome
d. ☐ Irritability
e. ☐ Lassitude
f. ☐ Headaches
g. ☐ Fatigue
h. ☐ Sensations of Warmth
i. ☐ Awareness of buzzing or vibrations
j. ☐ Loss of Appetite
k. ☐ Difficulties in Concentration
l. ☐ Loss of Memory
m. ☐ Dizziness
n. ☐ Tremulous
o. ☐ Hallucinations
p. ☐ Insomnia
q. ☐ Other symptom(s)

4. Check any of these diagnoses mentioned:

a. ☐ Alcoholism
b. ☐ Difficulties in interpersonal relationships, specify:
c. ☐ Psychopathic behavior, specify:
d. ☐ Anxiety neurosis
e. ☐ Hysterical neurosis
f. ☐ Phobic neurosis
g. ☐ Obsessive neurosis
h. ☐ Depressive neurosis
i. ☐ Neurasthenia
j. ☐ Depersonalization Syndrome
k. ☐ Other neurosis, specify:
l. ☐ Paranoid
m. ☐ Affective
n. ☐ Schizoid
o. ☐ Sexual deviation
p. ☐ Other

Form 8.0 Psychiatric Examination

5. Treatment: Since last psychiatric exam has this person ever:

☐ Been hospitalized_____
Specify date and reason

☐ Received psychotropic drugs_____
Specify drugs, date and reason

☐ Had psychotherapy_____

☐ Had psychoanalysis_____

☐ Other Treatment_____
Specify treatment and reason

6. Summary Diagnosis: (Include relevant ICDA code if available)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Reviewers Name_____ Date_____

Examining Physician_____

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C. SPOUSE NO. 1

1. Name

Last First Middle Maiden

2. _____ 3. _____ 4. Employed by State Department ☐ Yes ☐ No
Date of Birth Social Security No.

5. Current Address

Street City State Zip

6. Still Married: ☐ Yes ☐ No If No: Widowed ☐ Date _____
Divorced ☐ Date _____

D. CHILDREN: Please list ALL CHILDREN with this spouse whether living or dead. If dead, indicate date, place, and cemetery in the space for address. If social security number is unknown or not applicable please indicate.

Name and Current Address	Date of Birth	Social Security No
1. Name Address Zip		
2. Name Address Zip		
3. Name Address Zip		
4. Name Address Zip		
5. Name Address Zip		

Please use separate sheet if more than 5 children.

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Skip to Section I, page 5 if only one spouse

E. SPOUSE NO. 2

1. Name

Last First Middle Maiden

2. _____ Date of Birth 3. _____ Social Security No. 4. Employed by State Department ☐ Yes ☐ No

5. Current Address

Street City State Zip

6. Still Married: ☐ Yes ☐ No If No: Widowed ☐ Date _____

Divorced ☐ Date _____

F. CHILDREN: Please list ALL CHILDREN with this spouse whether living or dead. If dead, indicate date, place, and cemetery in the space for address. If social security number is unknown or not applicable please indicate.

Name and Current Address	Date of Birth	Social Security No
1. Name Address Zip		
2. Name Address Zip		
3. Name Address Zip		
4. Name Address Zip		
5. Name Address Zip		

Please use separate sheet if more than 5 children.

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Skip to Section I, page 5 if only two spouses.

G. SPOUSE NO. 3

1. Name

Last First Middle Maiden

2. _____ 3. _____ 4. Employed by ☐ ☐
Date of Birth Social Security No. State Department Yes No

5. Current Address

Street City State Zip

6. Still Married: ☐ ☐ If No: Widowed ☐ Date _____
Yes No
Divorced ☐ Date _____

H. CHILDREN: Please list ALL CHILDREN with this spouse whether living or dead. If dead, indicate date, place, and cemetery in the space for address. If social security number is unknown or not applicable please indicate.

Name and Current Address	Date of Birth	Social Security No
1. Name Address Zip		
2. Name Address Zip		
3. Name Address Zip		
4. Name Address Zip		
5. Name Address Zip		

Please use separate sheet if more than 5 children.

I. Any OTHER DEPENDENTS living with you during your tour of duty in Moscow.

Name and Current Address	Date of Birth	Social Security No.
1. Name Address Zip		
2. Name Address Zip		
3. Name Address Zip		
4. Name Address Zip		
5. Name Address Zip		
6. Name Address Zip		
7. Name Address Zip		

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E. Could you please list the names, and if known, the addresses of any employees you remember who were at the Moscow embassy when you were stationed there.

1. Name _____

   Address _____ Zip _____

2. Name _____

   Address _____ Zip _____

3. Name _____

   Address _____ Zip _____

4. Name _____

   Address _____ Zip _____

5. Name _____

   Address _____ Zip _____

6. Name _____

   Address _____ Zip _____

7. Name _____

   Address _____ Zip _____

8. Name _____

   Address _____ Zip _____

9. Name _____

   Address _____ Zip _____

10. Name _____

    Address _____ Zip _____

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DEPARTMENT OF STATE

Washington, D.C. 20520

June 1, 1977

MEMORANDUM TO: Participants in the Moscow Microwave Study

The accompanying letter from Johns Hopkins University invites you to serve as a participant in the study of the effects on employee health on assignment to Moscow with particular reference to the microwave problem. This study, which has the Secretary's personal interest, has obvious importance for the well being of our personnel who formerly served in the Moscow Embassy. Although you may not be one of those personnel, we are very interested in your participation in this project for purposes of making a comparison with the health situations of our Moscow employees.

I would like personally to urge you to return the Johns Hopkins questionnaire and to cooperate with the University in the completion of its study.

Dick Moose

Richard M. Moose

SOURCES USED FOR TRACING STUDY POPULATION

I. Directories and Source Books

1. Telephone directories (especially Northern Virginia, Suburban Maryland, and DC directories), Zipcode book
2. Criss-cross directories (utilized over the phone with the help of local library reference rooms across the country)
3. Department of State Biographic Register
4. Department of State Telephone Directory
5. USIA Phone Book
6. Department of Agriculture Telephone Directory
7. DOD Phone Book
8. Department of State Domestic Personnel Addresses (APO's and FPO's)
9. APO and FPO Numbers Equivalent List (for overseas personnel)
10. Who's Who in America 1950 - present
11. Facts on File 1956 - present
12. NY Times Obituary Listings 1885 - present
13. Federal Guide to Records Storage
14. Where to Write for Birth and Death Certificates in the USA
15. Lists of dependents who accompanied staff to Warsaw

II. Lists Supplied by State Department

1. Foreign Service Retired Club - Address List
2. Staffing Patterns
3. Foreign Service List
4. Marine Security Guard List
5. Army, Navy, and Air Force Lists
6. Who's Who List (teletyped from Moscow)

III. Hopkins Sources

1. Log books, file cards, folders

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2. Returned Tracing Questionnaires

3. Lists/directories mailed in from study participants with their TQR's

A. phone directories & personnel lists from embassies, including Moscow

B. Moscow Guest Lists - Armed Forces Day, May 15, 1964

IV. U.S. Government Offices

1. State Department

A. Directory Unit (Mail Room)

Mr. Donald Gentry - head
Ms. Dickinson - assistant

(1) Checked all persons in study who were classified as "State" for current address, retired and sometimes N.O.K.

(2) Updated address labels.

B. Foreign Service Retired

Ms. Gertrude Wieckoski - head
Mr. Richard Buck - clerk

(1) Checked records for people receiving retirement, disability annuities.

(2) Checked for annuities to dependents of deceased persons.

(3) Checked all separated (left F.S. before retirement) cards (supposedly everyone who had worked for F.S. was listed there).

(4) Checked files of all persons who died while employed by State Department (files were supposed to include death certificates).

C. Marine Security Guard Desk

Ms. Catherine "Ti" Kemp - assistant director
Kathy - secretary

(1) (office maintains SRC's on all MSG's) Checked all persons classified as MSG's and those names that came from back pages of known MSG's.

(2) Roslyn interviewers called often to locate MSG's.

D. Personnel Records

Mr. Larry Springer - chief

(1) (office theoretically maintains an SRC for everyone ever

employed by State Department) Checked all tracing sheets through files (after 1 year, all files sent to St. Louise).

E. Medical Records Division

Ms. Betty Jane Markowitz - secretary

(1) Utilized by Roslyn.

(2) Supplied information on military personnel, originally thought to be State Department.

F. Computer Department

Mr. Macon

(1) Determined that list of untraceables was teletyped list—referred to above Markowitz.

G. Management Operations

Mr. Ralph Lindstrom

(1) Supplied updated address lists on military and MSG's from St. Louis records.

H. Over-the-Phone

(1) Foreign Service Lounge - current personnel.

(2) Department of State Locator - people in DC.

(3) Call-backs to offices visited.

2. USIA (International Communication Agency)

A. Personnel Services

Mr. Jordan Harding - Privacy Act Officer
Ms. Marguerite Suite - secretary
Mr. Lewis Stubbs - record clerk

(1) Checked untraceables through current personnel listings and retired records.

(2) Received USIA telephone directory.

3. Department of Agriculture

A. Personnel Records

Ms. Doris Seuling
Ms. Sharon Hall

(1) Received telephone directory.

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(2) Checked all current overseas personnel.

(3) Checked offices retirement division.

4. Marine Headquarters

A. Marine Locator

Ms. Smith - supervisor
Ms. Farley
Ms. Jones

(1) Checked tracing sheets to verify status.

(2) Used their microfiche to search out active, inactive, reserved, retired, and overseas.

(3) Picked up social security numbers.

5. Over-the-Phone Contacts (including State Department)

A number of very cooperative people at the following agencies were extremely helpful and provided us with information on the active, enlisted, reserve, discharged, retired, and deceased employees of the Foreign Service, which enabled us to successfully trace our study population.

A. USIA

B. FAS

C. Department of Commerce

D. Federal Locator (Federal Information Center)

E. AID

F. Treasury Department

G. Marines

H. Army

I. Navy

J. Air Force

K. DIA (USDAO)

L. D/CIV

M. Voice of America (US/A)

V. State of Maryland Government Offices

1. United States Department of Health, Education and Welfare

   A. Social Security Administration
      Baltimore MD

      Mr. Warren Buckler

2. Department of Motor Vehicles

VI. Nation-wide Local Sources (utilized over the phone)

1. Police Departments

   A. Verified residences

   B. Contacted participants

2. Telephone Companies

   A. Contacted participants with unlisted phone numbers

   B. Verified residences

3. Public Libraries

   A. Provided unlisted phone numbers of participants when available in criss-cross directories

   B. Provided phone numbers of neighbors to participants, who were then called to contact the participants

4. Schools & Universities

   A. Provided information on students' whereabouts (study participants) and their families

5. City Municipalities

6. Draft Boards

7. Doctors' Offices & Hospitals (names from medical abstracts)

   A. Provided information on patients' whereabouts (study participants)

8. Post Offices

   A. Verified participants' addresses

   B. Contacted participants

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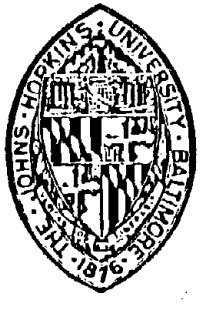
FOREIGN SERVICE HEALTH STATUS STUDY

HEALTH HISTORY QUESTIONNAIRE

PRIVILEGED INFORMATION

For use only by authorized research personnel



The Johns Hopkins University

School of Hygiene and Public Health

Department of Epidemiology

22 August 1977

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Study

PRIVILEGED INFORMATION

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The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

HEALTH HISTORY QUESTIONNAIRE

1. NAME _____ DATE _____ ☐☐☐☐☐☐
   Last First Middle Maiden 1 2 3 4 5 6 Study No.

2. ADDRESS _____ 3. SEX ☐ M ☐ F

4. DATE OF BIRTH _____ 5. PLACE OF BIRTH _____ 6. NO. OF GRADES OF SCHOOL COMPLETED _____

7. MARITAL HISTORY: Have you ever been married? NO☐ YES☐ No. of marriages _____

If yes, please complete the table below, if no skip to page 2. For females, include the maiden name.

	Marriage no. (If more than three, please use a separate sheet)		
	1	2	3
a. Spouse's name	First Middle Maiden	First Middle Maiden	First Middle Maiden
b. Date of birth			
c. Current address			
d. Date of marriage	From To	From To	From To
e. No. of children			
f. If ended, how did this marriage end?	☐ Divorced ☐ Separated ☐ Widowed	☐ Divorced ☐ Separated ☐ Widowed	☐ Divorced ☐ Separated ☐ Widowed
g. If spouse is dead	Date of death Place of death Cemetery Cause	Date of death Place of death Cemetery Cause	Date of death Place of death Cemetery Cause

8. **OCCUPATIONAL HISTORY:** Please complete the table below for each different foreign service assignment, military post, or job you have held since 1950 to your present position. Start with your present job, and list each post or assignment on a separate line. (This includes temporary duty.)

a. Have you ever been in the armed services? NO ☐ YES ☐ b. Date of discharge _____

c. Place of discharge _____

d. Beginning and end of each job assignment. Date (Mo./yr.) From To	e. Starting with your most recent job, who do (did) you work for? (Employer's name, city, state and country; if military, give branch of service)	f. What does this company do? (If foreign service, write in F.S.; If any other gov't agency, write in US Gov't.)	g. What is (was) your job title?	h. Do (did) you work in or near an area which exposed you to (Check if yes)			i. If yes to any item under h, please describe briefly (Use separate sheet if necessary)
				Radiation radar x-rays microwave	Chemicals or materials which gave off fumes	Chemicals	

Continued on next page

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d. Beginning and end of each job assignment Date (Mo./yr.) From To	e. Starting with your most recent job, who do (did) you work for? (Employer's name, city, state and country; if military, give branch of service)	f. What does this company do? (If foreign service, write in F.S.; if any other gov't agency, write in US Gov't.)	g. What is (was) your job title?	h. Do (did) you work in or near an area which exposed you to (Check if yes)			i. If yes to any item under h, please describe briefly (Use separate sheet if necessary)
				Radiation radar x-rays microwave	Chemicals or materials which gave off fumes	Chemicals	

9. SMOKING HISTORY

a. Cigarettes — Have you ever smoked cigarettes? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO Years since stopped ____ ☐ YES — amount/day ____

b. Cigars — Have you ever smoked cigars? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO ☐ Years since stopped ____ ☐ YES — amount/day ____

c. Pipe — Have you ever smoked a pipe? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO Years since stopped ____ ☐ YES — amount/day ____

10. APPLIANCES: Have you ever had any of the following? If yes, specify time period (Mo. & yr.).

	From To		From To
☐ Color T. V.	____	☐ C. B. Radio	____
☐ Other T. V.	____	☐ Ham Radio	____
☐ Microwave Oven	____	☐ Walkie Talkie	____

11. LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW: This includes temporary duty. (If never assigned to Moscow, skip to page 6.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

	Name (Last name only when different from employee) First M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
		Chancery				Compound (Outside main office building)	Outside compound	Chancery					
		Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee													
Spouse													
Children													
Dependents (In-laws, maids, etc.)													

* North – toward Gorky Street
South – toward Kalusovsky
East – toward Tchaikowsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

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11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, or only one assignment, please skip to page 5.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

	Name (Last name only when different from employee) First	M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
			Chancery				Compound (Outside main office building)	Outside compound	Chancery					
			Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee														
Spouse														
Children														
Dependents (in-laws, maids, etc.)														

* North – toward Gorky Street
South – toward Kutusovsky
East – toward Tchaikowsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, or only two assignments, please skip to page 6.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date ____________ Ending date ____________

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

	Name (Last name only when different from employee)		Working area (Normal business hours)									Living quarters				Total weeks away from post **	Total months at post (This assignment)
			Chancery					Compound (Outside main office building)			Outside compound	Chancery					
	First	M.I.	Floor	Room	Direction windows faced*	Working hours From	To	Place	Hours From	To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee																	
Spouse																	
Children																	
Dependents (In-laws, maids, etc.)																	

* North – toward Gorky Street
South – toward Katusovsky
East – toward Tchaikowsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

12. **DUTY ASSIGNMENTS TO FOREIGN EMBASSIES:** (If never assigned to one of the following embassies, skip to page 6.) (If more than 6 assignments, please use a separate sheet.)

a. Please indicate the embassy or embassies you have been assigned to by checking the appropriate box(es).
b. Complete the table below for each different post assignment starting with the most recent, and please include the information for all dependents living with you at each post.

- ☐ Budapest
- ☐ Belgrade
- ☐ Leningrad
- ☐ Bucharest
- ☐ Prague
- ☐ Sofia
- ☐ Warsaw
- ☐ Zagreb

	Name (Last name only when different from employee) First M.I.	Time Period Served at Embassy (Months and Years)											
		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____	
		Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)
Employee													
Spouse													
Children													
Dependents (In-laws, maids, etc.)													

*Vacation, leave, boarding schools, temporary duty elsewhere, etc.

13. RESIDENTIAL HISTORY: Please indicate below each city, state, and country lived in since 1950. Start with the most recent and indicate whether the residence was in an embassy, on a military post or other, and if in more than one residence during a single duty tour, the amount of time you lived in each.*

Years lived here Date (Mo. & yr.) From To	Location (City, state, country; for military, include name of post)	Time spent in each residence which applies (Mos. & yrs.)			
		Foreign Service		Military	
		Lived in embassy	Private residence	Lived on post	Private residence

*Please use a separate sheet if necessary.

14. FORMER OR PRESENT MILITARY PERSONNEL: Please complete the information below for the most recent medical treatment or visit for any reason while on a military post:

Military Post _____ Month & year _____

☐ Inpatient
☐ Outpatient
☐ Psychiatric

13. GENERAL MEDICAL HISTORY: Have you ever had any of the following conditions?

For each yes in column 1, please fill in columns 2 to 7.

Condition	(1) Check if yes	(2) First occurrence (Yr.)	(3) First seen by physician (Yr.)	(4) Treated currently (yes or no)	(5) Current or most recent physician and/or clinic (Name & address)	(6) Hospital, if hospitalized (Name & address)	(7) Diagnosis or comments (If relevant)
Cataracts							
Any other eye problems (specify)							
Heart trouble of any kind							
Stroke							
High blood pressure							
Paralysis of any kind							
Thrombophlebitis							
Kidney stones or kidney trouble							
Diabetes							
Epilepsy convulsions or seizures							
Serious anemia or blood disorders of any kind (specify)							
Varicose veins							
Chronic bronchitis or lung infection							
Allergic diseases (asthma, hay fever, hives, etc., specify)							

Continued on page

15. ENERAL MEDICAL HISTORY: (Continued)

Condition	(1) Check if yes	(2) First occurrence (Yr.)	(3) First seen by physician (Yr.)	(4) Treated currently (Yes or no)	(5) Current or most recent physician and/or clinic (Name & address)	(6) Hospital, if hospitalized (Name & address)	(7) Diagnosis or comments (If relevant)
Psoriasis							
Other skin conditions							
Goiter or thyroid trouble							
Encephalitis							
Hepatitis							
Rheumatic fever							
Arthritis or rheumatism							
Tumor, cyst or growth							
Gallbladder disease or gall stones							
Stomach or duodenal ulcers							
Hernia (location)							
Leukemia							
Heart rhythm disturbances							
Any other disease (specify)							

A 7910

16. **SYMPTOM HISTORY:** Have you ever had any of the symptoms listed below?
For each yes in column 1, please fill in columns 2 to 8.

Symptom	(1) Check if yes	(2) First occurrence From	(2) First occurrence To	(3) First seen by physician (Mo. & yr.)	(4) Other espisodes From	(4) Other espisodes To	(5) Seen by physician (Mo. & yr.)	(6) Treated currently (Yes or no)	(7) Current or most recent physician and/or hospital where treated (Name & address)	(8) Diagnosis or comments
Blackout or fainting spells										
Depression										
Migraine or frequent headaches										
Sleepiness										
Lassitude and/or fatigue										
Irritability										
Nervous or mental disorders, any kind										
Anxiety										
Buzzing or vibrations in ear; other hearing difficulty										
Intraocular pain										

Continued on n page

16. SYMPTOM HISTORY: (Continued)

Symptom	(1) Check if yes	(2) First occurrence From	(2) First occurrence To	(3) First seen by physician (Mo. & yr.)	(4) Other episodes From	(4) Other episodes To	(5) Seen by physician (Mo. & yr.)	(6) Treated currently (Yes or no)	(7) Current or most recent physician and/or hospital where treated (Name & address)	(8) Diagnosis or Comments
Sensations of warmth and flushes										
Loss of appetite										
Difficulty concentrating										
Loss of memory										
Dizziness										
Tremor of fingers										
Hallucinations										
Insomnia, difficulty sleeping										
Neurosis (specify)										
Other symptoms (specify)										

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17. HISTORY OF HOSPITALIZATION SINCE 1950

Have you ever stayed as long as one night in a hospital? (Women, exclude childbirth.) ☐ NO ☐ YES.
If yes, please give the following information starting with the most recent hospitalizations.

Hospital (Name & address)		Date (Mo. & yr.)	Reason for hospitalization	Surgery (Yes or no) If yes, specify operation

18. PHYSICIAN OR CLINIC VISITS SINCE 1950

Please list all physician and/or clinic visits since 1950 other than routine employment exams.

Physician and/or clinic (Name & address)		Date (Mo. & yr.)	Specialty	Reason for visit

19. **ACCIDENTS/INJURIES:** Have you had any accidents or injuries which required you to visit a physician or hospital since 1950? ☐ NO ☐ YES If yes, please complete the table below:

Kind of accident (car, fall, etc.)	Physician or hospital where attended (Name & address)		Date (Mo. & yr.)	Describe Injuries

20. **FLUOROSCOPY:** Has a physician ever examined you by fluoroscopy (looking at you through a screen in a dark room)?
☐ NO ☐ YES If yes, please complete the table below:

Part of the body examined	Physician or hospital where done (Name & address)		Date (Mo. & yr.)	For what illness or injury were you examined?

A 70.14

A 2 8 15

21. X-RAYS: Have you ever been x-rayed? ☐NO ☐YES If yes, please check the appropriate boxes below:

☐ Fracture or accident
☐ Chest (include mobile unit)
☐ Skin trouble (warts, acne, etc.)
☐ Bursitis or arthritis
☐ Thymus or thyroid
☐ G. I. Series (barium swallow or enema)
☐ Tonsils and adenoids
☐ Dental work
☐ Shoe fitting
☐ Other _____ (specify)

For each time x-rayed, please complete the table below, starting with the most recent x-ray.

What part of the body was x-rayed? (chest, stomach, etc.)	Physician's office and/or hospital where done (Name & address)		Date (Mo. & yr.)	Reason Describe accident or illness for which x-ray was taken	Approx-imate no. of films taken

22. **RADIATION THERAPY:** Have you ever had any treatments with radium, cobalt 60, cobalt bomb radio isotopes or atomic cocktail?
☐ NO ☐ YES ☐ DON'T KNOW If yes, please complete the table below: (Start with most recent)

Type of therapy				Physician or hospital where done (Name & address)		Date (Mo. & yr.)	What part of the body was treated (stomach, bowel, etc.)	Reason (or condition) for therapy	No. of treatments
Radium	Cobalt 60	Radio-active Isotopes	Other (specify)						

23. **DIATHERMY TREATMENTS:** Have you ever had any diathermy treatments for conditions such as bursitis, arthritis, or muscle soreness?
☐ NO ☐ YES ☐ DON'T KNOW If yes, please complete the table below: (Start with most recent)

What part of body received treament	Physician or hospital where done (Name & address)		Date (Mo. & yr.)	Reason (or condition) for diathermy	No. of treatments

A7916

A7P17

24. REPRODUCTIVE EXPERIENCE: (Males go to page 18)

a. Have you ever menstruated? NO ☐ YES ☐ If yes, give age at first menstrual period. ___yrs.

b. Have you ever sought medical attention for difficulties with menstrual periods? NO ☐ YES ☐

If yes, please complete table below beginning with your most recent visit:

Physician and/or hospital (Name & address)		Date (Mo. & yr.)	Problem (Frequency of flow, pain, etc.)	Treatment & result

c. Have you had or are you having your menopause or change of life?

NO ☐ YES ☐ If yes, please complete questions 1, 2 and 3 below:

(1) Menopause started Date, (Mo. & yr.)_____ Age _____

(2) Menopause ended Date, (Mo. & yr.)_____ Age _____

(3) Did menopause occur naturally or was it artificially induced?

Occurred naturally ☐ Artificially induced ☐

If artificially induced, please specify:

Operation or treatment _____ Date _____

Physician _____
(Name & address) _____

_____

Hospital or clinic _____
(Name & address) _____

d. Have you had any other operation, accidents, or illness which might prevent you from becoming pregnant?

NO ☐ YES ☐ If yes, please specify:

Type of operation _____ Date _____

Physician _____
(Name & address) _____

_____

Hospital or clinic _____
(Name & address) _____

REPRODUCTIVE EXPERIENCE: (Continued)

e. How many children do or did you want to have? No. children_____(If none, go to page 20)

f. Have you been able to complete your desired family size? YES ☐ NO ☐ (If yes, go to question g)

(1) If no, are your reason(s) Medical ☐ Non-Medical ☐ specify: _____

(2) If medical, did you or your husband seek treatment because it was difficult for you to become pregnant or to have children? NO ☐ YES ☐

If yes, complete table below beginning with your most recent visit:

Physician and/or hospital (Name & address)	Date (Mo. & yr.)	Reason for problem	Treatment	Physician seen by	
				Husband	Wife

g. Have you or your husband used any methods of birth control during your marriage? NO ☐ YES ☐

If yes, please specify in table below, starting with the present, both the method of contraception used and the period of time when no contraception was used:

Method used or no contraceptive used	From (Mo. & yr.)	To (Mo. & yr.)	Method used or no contraceptive used	From (Mo. & yr.)	To (Mo. & yr.)

A 7 p. 1.

25. PREGNANCY AND CHILDBEARING HISTORY

a. Have you ever been pregnant? NO ☐ YES ☐ b. How many times? _____

(If yes, please complete table below listing all pregnancies, beginning with the first pregnancy. Include miscarriages and stillbirths.)

(If no, go to page 18)

Pregnancy order: No.	Child's first name	Date pregnancy ended or date of birth	Residence during pregnancy, list all if more than one (No. of mos. in each)	Physician and/or hospital (Name & address)	Pregnancy outcome and no. of months pregnant*	Sex (circle)	Birth weight	Did you smoke during this pregnancy? Yes	No	Don't remember	Child alive? (circle)
1.						M F					Yes No
2.						M F					Yes No
3.						M F					Yes No
4.						M F					Yes No
5.						M F					Yes No
6.						M F					Yes No
7.						M F					Yes No
8.						M F					Yes No

*Pregnancy outcome: i.e. live birth, stillbirth or fetal death, miscarriage (spontaneous abortion) therapeutic abortion (see table 25 c below).

c. If pregnancy outcome was stillbirth, miscarriage, or abortion, and reason for outcome is known (accident, complications, illness during pregnancy, congenital malformations incompatible with life, other, etc.), please complete table below:

Pregnancy number	Reason for outcome

26. **STATUS OF CHILDREN, INCLUDING ADOPTED OR STEPCHILDREN:** Males who know their wives are completing these questions, please skip to page 20. (If adopted, please include with name of child, dates of birth and adoption).

a. Have any of your children had one of the problems or conditions listed below? ☐ NO ☐ YES
If yes, please list in order of birth, live births, adopted or stepchildren who have had any one of the problems or conditions listed below:
(Check appropriate column and use a separate line for each problem or condition)

Child's first name	Congenital malformations (birth defects)*	Leukemia, other malignancies	Blood disorders **	Mental or nervous conditions	Behavioral problems	Chronic diseases ***	Hospitalizations or operations	Other conditions	Conditions (Please specify)	Current or most recent physician and/or hospital (clinic) seen for condition (Name & address)	Date (Mo. & yr.)

* Congenital malformations include mongolism (Down's syndrome), congenital heart defects, spina bifida, harelip, others, etc.
** Blood disorders include polycythemia, anemia, neutropenia, hemorrhagic disease of newborn, other, etc.
*** Chronic diseases include asthma, epilepsy, ulcerative colitis, renal diseases, others, etc.

NOTE: If one child has had a number of problems and/or physician or hospital visits - you may use as many blocks as necessary to complete the information. (Use a separate sheet if necessary)

A7p2

A7p21

26. b. Do any of your children have either vision problems and/or lens abnormalities? NO☐ YES☐
If yes, please complete the table below indicating type of abnormality:

Child's first name	Visual problems YES NO	Current or most recent physician and/or clinic seen (Name & address)	Date (Mo. & yr.)	Lens abnormality YES NO	Current or most recent physician and/or clinic seen (Name & address)	Date (Mo. & yr.)

c. For Dependents of the Military Only. Please specify most recent medical treatment or visit for any reason for each child while on a military post:

Child's first name	Physician and/or clinic (Name & address)	Year of visit	Type of Visit		
			Inpatient	Outpatient	Psychiatric

d. For children who have died, please complete table below:

Child's full name	Date of death	Age at death	Cause of death	Place of death (City, state, country)	Cemetery

Copy of Authorization to Furnish Information

Please read and sign the authorizations. Detach and retain the copy of the authorization (on the left) for your records.

Foreign Service Health Status Study
Department of Epidemiology
School of Hygiene and Public Health
The Johns Hopkins University
615 North Wolfe Street
Baltimore, Maryland 21205

Phone 301-955-3616

I understand that the purpose of this survey is to learn more about the health effects of microwave radiation and that all information obtained is held in the strictest confidence by those responsible for this project.

I therefore authorize and request my personal physician, the hospitals to which I have been admitted and the physicians who have attended me while I was a patient to furnish to Dr. Abraham M. Lilienfeld and the Foreign Service Health Status Study staff of Johns Hopkins all information concerning my case history, treatments, examinations, and/or hospitalizations, including copies of hospital and medical records.

Signed _____

Date _____

AUTHORIZATION TO FURNISH INFORMATION

Foreign Service Health Status Study

I understand that the purpose of this survey is to learn more about the health effects of microwave radiation and that all information obtained is held in the strictest confidence by those responsible for this project.

I therefore authorize and request my personal physician, the hospitals to which I have been admitted and the physicians who have attended me while I was a patient to furnish to Dr. Abraham M. Lilienfeld, Department of Epidemiology, of the Johns Hopkins School of Hygiene and Public Health, all information concerning my case history, treatments, examinations, and/or hospitalizations, including copies of hospital and medical records.

Signed _____

Date _____

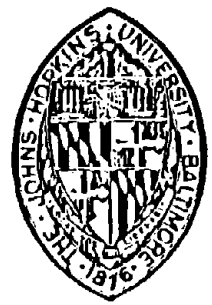
47p23

FOREIGN SERVICE HEALTH STATUS STUDY

HEALTH HISTORY QUESTIONNAIRE

PRIVILEGED INFORMATION

For use only by authorized research personnel



The Johns Hopkins University

School of Hygiene and Public Health

Department of Epidemiology

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22 August 1977

A 7p 24

Health Status Study

PRIVILEGED INFORMATION

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

HEALTH HISTORY QUESTIONNAIRE

1. NAME _____ DATE _____ | | | | | | | |
Last First Middle Maiden 1 2 3 4 5 6 Study No.

2. ADDRESS _____ 3. SEX ☐ M ☐ F

4. DATE OF BIRTH _____ 5. PLACE OF BIRTH _____ 6. NO. OF GRADES OF SCHOOL COMPLETED _____

7. MARITAL HISTORY: Have you ever been married? NO ☐ YES ☐ No. of marriages _____

If yes, please complete the table below, if no skip to page 2. For females, include the maiden name.

	Marriage no. (If more than three, please use a separate sheet)		
	PRESENT MARRIAGE	NEXT MOST RECENT MARRIAGE	NEXT MOST RECENT MARRIAGE
	First Middle Maiden	First Middle Maiden	First Middle Maiden
a. Spouse's name			
b. Date of birth			
c. Current address			
d. Date of marriage	From To	From To	From To
e. No. of children	ANY CHILDREN, SEE SEPARATE INSERT		
f. If ended, how did this marriage end?	☐ Divorced ☐ Separated ☐ Widowed	☐ Divorced ☐ Separated ☐ Widowed	☐ Divorced ☐ Separated ☐ Widowed
g. If spouse is dead	Date of death Place of death Cemetery Cause	Date of death Place of death Cemetery Cause	Date of death Place of death Cemetery Cause

ASK: a., b., c.
ASK PRESENT OCCUPATION, ITEMS d-f
ASK: HAVE YOU EVER HAD ANY OCCUPATION WHICH EXPOSED YOU TO RADIATION (RADAR, X-RAYS, MICROWAVES) OR CHEMICALS (IF YES, FILL IN d-i)

8. **OCCUPATIONAL HISTORY:** Please complete the table below for each different foreign service assignment, military post, or job you have held since 1950 to your present position. Start with your present job, and list each post or assignment on a separate line. (This includes temporary duty.)

a. Have you ever been in the armed services? NO ☐ YES ☐ b. Date of discharge _____

c. Place of discharge _____

	d. Beginning and end of each job assignment. Date (Mo./yr.) From To	e. Starting with your most recent job, who do (did) you work for? (Employer's name, city, state and country; if military, give branch of service)	f. What does this company do? (If foreign service, write in F.S.; if any other gov't agency, write in US Gov't.)	g. What is (was) your job title?	h. Do (did) you work in or near an area which exposed you to (Check if yes) Radiation radar x-rays microwave	Chemicals or materials which gave off fumes	Chemicals	i. If yes to any item under h, please describe briefly (Use separate sheet if necessary)
	PRESENT	OCCUPATION:						
(1)								
	ANY OCCUPATION WHICH EXPOSED YOU TO RADIATION (RADAR, X-RAYS, MICROWAVES)?							
(2)								
(3)								
	ANY OCCUPATION WHICH EXPOSED YOU TO CHEMICALS OR MATERIALS WHICH GAVE OFF FUMES?							
(4)								
(5)								

Continued on next page

A 7p-2

8. OCCUPATIONAL HISTORY: (Continued)

d. Beginning and end of each job assignment. Date (Mo./yr.) From To	e. Starting with your most recent job, who do (did) you work for? (Employer's name, city, state and country; if military, give branch of service)	f. What does this company do? (If foreign service, write in F.S.; If any other gov't agency, write in US Gov't.)	g. What is (was) your job title?	h. Do (did) you work in or near an area which exposed you to (Check if yes) Radiation radar x-rays microwave	Chemicals or materials which gave off fumes	Chemicals	i. If yes to any item under h, please describe briefly (Use separate sheet if necessary)

9. SMOKING HISTORY

a. Cigarettes — Have you ever smoked cigarettes? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO Years since stopped ____ ☐ YES — amount/day ____

b. Cigars — Have you ever smoked cigars? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO ☐ Years since stopped ____ ☐ YES — amount/day ____

c. Pipe — Have you ever smoked a pipe? ☐ NO ☐ YES — No. of years ____ amount/day ____
Do you smoke now? ☐ NO Years since stopped ____ ☐ YES — amount/day ____

10. APPLIANCES: Have you ever had any of the following? If yes, specify time period (Mo. & yr.).

	From To		From To
☐ Color T. V.		☐ C. B. Radio	
☐ Other T. V.		☐ Ham Radio	
☐ Microwave Oven		☐ Walkie Talkie	

Page 3 of 4

11. LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW: This includes temporary duty. (If never assigned to Moscow, skip to page 5.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) _____

	Name (Last name only when different from employee) First M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
		Chancery				Compound (Outside main office building)	Outside compound	Chancery					
		Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee													
Spouse													
Children													
Dependents (In-laws, maids, etc.)													

* North = toward Gorky Street
South = toward Kutuzovsky
East = toward Tchaikowsky Street
West = toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, or only one assignment, please skip to page 5.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) _____

	Name (Last name only when different from employee) First M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
		Chancery				Compound (Outside main office building)	Outside compound	Chancery					
		Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee													
Spouse													
Children													
Dependents (In laws, maids, etc.)													

* North – toward Gorky Street
South – toward Kutusovsky
East – toward Tchaikovsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

A 2989

11. LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW: This includes temporary duty. (If never assigned to Moscow, or only two assignments, please skip to page 5.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 4, 4.1, 4.2 are provided, please use a blank sheet if more than 3 tours in Moscow.

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) _____

	Name (Last name only when different from employee) First M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
		Chancery				Compound (Outside main office building)	Outside compound	Chancery					
		Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee													
Spouse													
Children													
Dependents (In laws, maids, etc.)													

* North – toward Dmitry Street
South – toward Kutusovsky
East – toward Tchaikowsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

App 3C

12. **DUTY ASSIGNMENTS TO FOREIGN EMBASSIES:** (If never assigned to one of the following embassies, skip to page 6.) (If more than 6 assignments, please use a separate sheet.)

a. Please indicate the embassy or embassies you have been assigned to by checking the appropriate box(es).

b. Complete the table below for each different post assignment starting with the most recent, and please include the information for all dependents living with you at each post.

c. OCCUPATION (EMBASSY) _____

OCCUPATION (EMBASSY) _____

- ☐ Budapest
- ☐ Belgrade
- ☐ Leningrad
- ☐ Bucharest
- ☐ Prague
- ☐ Sofia
- ☐ Warsaw
- ☐ Zagreb

	Name (Last name only when different from employee) First M.I.	Time Period Served at Embassy (Months and Years)											
		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____		Embassy_____ Beginning date_____ Ending date_____	
		Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)
Employee													
Spouse													
Children													
Dependents (in laws, maids, etc.)													

*Vacation, leave, boarding schools, temporary duty elsewhere, etc.

13. RESIDENTIAL HISTORY: Please list below each city, state, and country in which you have lived since 1950. Start with the most recent and indicate whether the residence was in an embassy, on a military post or other, and if in more than one residence during a single duty tour, the amount of time you lived in each.*

Years lived here — Date (Mo. & yr.) From	To	Location (City, state, country; for military, include name of post)	Time spent in each residence which applies (Mos. & yrs.) — Foreign Service: Lived in embassy	Foreign Service: Private residence	Military: Lived on post	Military: Private residence

*Please use a separate sheet if necessary.

ASK

14. FORMER OR PRESENT MILITARY PERSONNEL: Please complete the information below for the most recent medical treatment or visit for any reason while on a military post:

Military Post _____ Month & year _____

☐ Inpatient
☐ Outpatient
☐ Psychiatric

App 32

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16. **GENERAL MEDICAL HISTORY: Have you ever had any of the following conditions?**
For each yes in column 1, please fill in columns 2 to 7.

Condition	(1) Check if yes	(2) First occurrence (Yr.)	(3) First seen by physician (Yr.)	(4) Treated currently (yes or no)	(5) Current or most recent physician and/or clinic (Name & address)	(6) Hospital, if hospitalized (Name & address)	(7) Diagnosis or comments (If relevant)
Cataracts							
Any other eye problems (specify)							
Heart trouble of any kind							
Stroke							
High blood pressure							
Paralysis of any kind							
Thrombophlebitis							
Kidney stones or kidney trouble							
Diabetes							
Epilepsy convulsions or seizures							
Serious anemia or blood disorders of any kind (specify)							
Varicose veins							
Chronic bronchitis or lung infection							
Allergic diseases (asthma, hay fever, hives, etc., specify)							

Continued on next page

GENERAL MEDICAL HISTORY (continued)

Condition	(1) Check if yes	(2) First occurrence (Yr.)	(3) First seen by physician (Yr.)	(4) Treated currently (Yes or no)	(5) Current or most recent physician and/or clinic (Name & address)	(6) Hospital, if hospitalized (Name & address)	(7) Diagnosis or comments (If relevant)
Psoriasis							
Other skin conditions							
Goitur or thyroid trouble							
Encephalitis							
Hepatitis							
Rheumatic fever							
Arthritis or rheumatism							
Tumor, cyst or growth							
Gallbladder disease or gall stones							
Stomach or duodenal ulcers							
Hernia (location)							
Leukemia							
Heart rhythm disturbances							
Any other disease (specify)							

4790 34

10. **SYMPTOM HISTORY:** Have you ever had any of the symptoms listed below? For each yes in column 1, please fill in columns 2 to 8.

Symptom	(1) Check if yes	(2) First occurrence From	(2) First occurrence To	(3) First seen by physician (Mo. & yr.)	(4) Other episodes From	(4) Other episodes To	(5) Seen by physician (Mo. & yr.)	(6) Treated currently (Yes or no)	(7) Current or most recent physician and/or hospital where treated (Name & address)	(8) Diagnosis or comments
Blackout or fainting spells										
Depression										
Migraine or frequent headaches										
Sleepiness										
Lassitude and/or fatigue										
Irritability										
Nervous or mental disorders, any kind										
Anxiety										
Buzzing or vibrations in ear; other hearing difficulty										
Intraocular pain										

Continued next page

16. SYMPTOM HISTORY: (Continued)

Symptom	(1) Check if yes	(2) First occurrence From	(2) First occurrence To	(3) First seen by physician (Mo. & yr.)	(4) Other episodes From	(4) Other episodes To	(5) Seen by physician (Mo. & yr.)	(6) Treated currently (Yes or no)	(7) Current or most recent physician and/or hospital where treated (Name & address)	(8) Diagnosis or Comments
Sensations of warmth and flushes										
Loss of appetite										
Difficulty concentrating										
Loss of memory										
Dizziness										
Tumor of fingers										
Hallucinations										
Insomnia, difficulty sleeping										
Neurosis (specify)										
Other symptoms (specify)										

A 7-p 86

A 7937

17. **HISTORY OF HOSPITALIZATION SINCE 1950**

Have you ever stayed as long as one night in a hospital? (Women, exclude childbirth.) ☐ NO ☐ YES.
If yes, please give the following information starting with the most recent hospitalizations.

Hospital (Name & address)		Date (Mo. & yr.)	Reason for hospitalization	Surgery (Yes or no) If yes, specify operation

18. **PHYSICIAN OR CLINIC VISITS SINCE 1950**

Please list all physician and/or clinic visits since 1950 other than routine employment exams.

Physician and/or clinic (Name & address)		Date (Mo. & yr.)	Specialty	Reason for visit

19. **ACCIDENTS/INJURIES:** Have you had any accidents or injuries which required you to visit a physician or hospital since 1960? ☐ NO ☐ YES If yes, please complete the table below:

Kind of accident (car, fall, etc.)	Physician or hospital where attended (Name & address)		Date (Mo. & yr.)	Describe injuries

20. **FLUOROSCOPY:** Has a physician ever examined you by fluoroscopy (looking at you through a screen in a dark room)?
☐ NO ☐ YES If yes, please complete the table below:

Part of the body examined	Physician or hospital where done (Name & address)		Date (Mo. & yr.)	For what illness or injury were you examined?

A 7 of 8

47p39

21. X-RAYS: Have you ever been x-rayed? ☐ NO ☐ YES   If yes, please check the appropriate boxes below:

☐ Fracture or accident
☐ Chest (include mobile unit)
☐ Skin trouble (warts, acne, etc.)
☐ Bursitis or arthritis
☐ Thymus or thyroid
☐ G. I. Series (barium swallow or enema)
☐ Tonsils and adenoids
☐ Dental work
☐ Shoe fitting
☐ Other ______________________ (specify)

For each time x-rayed, please complete the table below, starting with the most recent x-ray.

What part of the body was x-rayed? (chest, stomach, etc.)	Physician's office and/or hospital where done (Name & address)		Date (Mo. & yr.)	Reason Describe accident or illness for which x-ray was taken	Approx-imate no. of times or visits

22. **RADIATION THERAPY:** Have you ever had any treatments with radium, cobalt 60, cobalt bomb radio isotopes or atomic cocktail?
☐ NO ☐ YES ☐ DON'T KNOW If yes, please complete the table below: (Start with most recent)

Type of therapy				Physician or hospital where done (Name & address)		Date (Mo. & yr.)	What part of the body was treated (stomach, bowel, etc.)	Reason (or condition) for therapy	No. of treatments
Radium	Cobalt 60	Radio-active Iso-topes	Other (specify)						

23. **DIATHERMY TREATMENTS:** Have you ever had any diathermy treatments for conditions such as bursitis, arthritis, or muscle soreness?
☐ NO ☐ YES ☐ DON'T KNOW If yes, please complete the table below: (Start with most recent)

What part of body received treament	Physician or hospital where done (Name & address)		Date (Mo. & yr.)	Reason (or condition) for diathermy	No. of treatments

A 7940

26. PREGNANCY AND CHILDBEARING HISTORY

a. Have you ever been pregnant? NO ☐ YES ☐ b. How many times? _____

(If yes, please complete table below listing all pregnancies, beginning with the first pregnancy. Include miscarriages and stillbirths.)

(If no, go to page 10)

Pregnancy order: No.	Child's first name	Date pregnancy ended or date of birth	Residence during pregnancy, list all if more than one (No. of mos. in each)	Physician and/or hospital (Name & address)	Pregnancy outcome and no. of months pregnant*	Sex (circle)	Birth weight	Did you smoke during this pregnancy? Yes	No	Don't remember	Child alive? (circle)
1.						M F					Yes No
2.						M F					Yes No
3.						M F					Yes No
4.						M F					Yes No
5.						M F					Yes No
6.						M F					Yes No
7.						M F					Yes No
8.						M F					Yes No

*Pregnancy outcome: i.e. live birth, stillbirth or fetal death, miscarriage (spontaneous abortion) therapeutic abortion (see table 26 c below).

c. If pregnancy outcome was stillbirth, miscarriage, or abortion, and reason for outcome is known (accident, complications, illness during pregnancy, congenital malformations incompatible with life, other, etc.), please complete table below:

Pregnancy number	Reason for outcome

d. Have you ever taken oral contraceptives? FROM MO & YEAR TO MO & YEAR

26. **STATUS OF CHILDREN, INCLUDING ADOPTED OR STEPCHILDREN:** Males who know their wives are completing these questions, please skip to page 20. (If adopted, please include with name of child, dates of birth and adoption).

a. Have any of your children had one of the problems or conditions listed below? ☐ NO ☐ YES
If yes, please list in order of birth, live births, adopted or stepchildren who have had any one of the problems or conditions listed below:
(Check appropriate column and use a separate line for each problem or condition)

Child's first name	Congenital malformations (birth defects)*	Leukemia, other malignancies	Blood disorders **	Mental or nervous conditions	Behavioral problems	Chronic diseases ***	Hospitalizations or operations	Other conditions	Conditions (Please specify)	Current or most recent physician and/or hospital (clinic) seen for condition (Name & address)	Date (Mo. & yr.)

* Congenital malformations include mongolism (Down's syndrome), congenital heart defects, spina bifida, harelip, others, etc.
** Blood disorders include polycythemia, anemia, neutropenia, hemorrhagic disease of newborn, other, etc.
*** Chronic diseases include asthma, epilepsy, ulcerative colitis, renal diseases, others, etc.

NOTE: If one child has had a number of problems and/or physician or hospital visits - you may use as many blocks as necessary to complete the information. (Use a separate sheet if necessary)

A 2944 - 1

A 7p43

26. b. Do any of your children have either vision problems and/or lens abnormalities? NO☐ YES☐
If yes, please complete the table below indicating type of abnormality:

Child's first name	Visual problem YES NO	Current or most recent physician and/or clinic seen (Name & address)	Date (Mo. & yr.)	Lens abnormality YES NO	Current or most recent physician and/or clinic seen (Name & address)	Date (Mo. & yr.)

c. For Dependents of the Military Only. Please specify most recent medical treatment or visit for any reason for each child while on a military post:

Child's first name	Physician and/or clinic (Name & address)	Year of visit	Type of Visit		
			Inpatient	Outpatient	Psychiatric

d. For children who have died, please complete table below:

Child's full name	Date of death	Age at death	Cause of death	Place of death (City, state, country)	Cemetery

Copy of Authorization to Furnish Information

Please read and sign the authorizations. Detach and retain the copy of the authorization (on the left) for your records.

Foreign Service Health Status Study
Department of Epidemiology
School of Hygiene and Public Health
The Johns Hopkins University
615 North Wolfe Street
Baltimore, Maryland 21205

Phone 301-955-3616

I understand that the purpose of this survey is to learn more about the health effects of microwave radiation and that all information obtained is held in the strictest confidence by those responsible for this project.

I therefore authorize and request my personal physician, the hospitals to which I have been admitted and the physicians who have attended me while I was a patient to furnish to Dr. Abraham M. Lilienfeld and the Foreign Service Health Status Study staff of Johns Hopkins all information concerning my case history, treatments, examinations, and/or hospitalizations, including copies of hospital and medical records.

Signed ______________________________

Date ______________________________

AUTHORIZATION TO FURNISH INFORMATION

Foreign Service Health Status Study

I understand that the purpose of this survey is to learn more about the health effects of microwave radiation and that all information obtained is held in the strictest confidence by those responsible for this project.

I therefore authorize and request my personal physician, the hospitals to which I have been admitted and the physicians who have attended me while I was a patient to furnish to Dr. Abraham M. Lilienfeld, Department of Epidemiology, of the Johns Hopkins School of Hygiene and Public Health, all information concerning my case history, treatments, examinations, and/or hospitalizations, including copies of hospital and medical records.

Signed ______________________________

Date ______________________________

A7844

A 7 p 45

FOREIGN SERVICE HEALTH STATUS STUDY

HEALTH HISTORY QUESTIONNAIRE

PRIVILEGED INFORMATION

For use only by authorized research personnel

The Johns Hopkins University

School of Hygiene and Public Health

Department of Epidemiology

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18 April 1978 Revised

A 7846

Foreign Ser ce Health Status Study

Form 7.3R3IIHQ

4?p41

RESPONDENT:

1. NAME ______________________ DATE __________ [ ][ ][ ][ ][ ][ ]
Last First Middle Maiden 1 2 3 4 5 6

2. ADDRESS ______________________ 3. SEX [ ] M [ ] F

4. DATE OF BIRTH __________ 5. PLACE OF BIRTH __________ 6. NO. OF GRADES OF SCHOOL COMPLETED ______

7. MARITAL HISTORY: Have you ever been married? NO [ ] YES [ ] No. of Marriages __________ (If yes, please complete the table below. For females, include the maiden name.) EVER EMPLOYED STATE DEPT. [ ] NO [ ] YES: Dates ______ from ______ to

SPOUSE: NAME ______________________ ADDRESS ______________________
Last First Middle Maiden

EVER EMPLOYED STATE DEPT. [ ] NO [ ] YES: Dates ______ From ______ To BIRTH DATE ______ DATE MARRIED ______ From ______ To

If marriage ended: [ ] DIVORCE [ ] DEATH: DATE __________ PLACE __________

CEMETERY __________ CAUSE __________

CHILDREN: NAME AND ADDRESS	BIRTHDATE	ALIVE (✓)	DEATH DATE	PLACE OF DEATH AND CEMETERY	CAUSE OF DEATH
1.					
2.					
3.					
4.					
5.					
6.					

ADDITION. MARRIAGES

SPOUSE: NAME _____ ADDRESS _____
Last First Middle Maiden

EVER EMPLOYED STATE DEPT. ☐ NO ☐ YES: Dates _____ _____ BIRTH DATE _____ DATE MARRIED _____ _____
From To From To

If marriage ended: ☐ DIVORCE ☐ DEATH: DATE _____ PLACE _____

CEMETERY _____ CAUSE _____

CHILDREN: NAME AND ADDRESS	BIRTHDATE	ALIVE (✓)	DEATH DATE	PLACE OF DEATH AND CEMETERY	CAUSE OF DEATH
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					

A704

11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, skip to page 6.)
Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 3, 4, 5 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) _____

	Name (Last name only when different from employee) First M.I.	Working area (Normal business hours)						Living quarters				Total weeks away from post **	Total months at post (This assignment)
		Chancery				Compound (Outside main office building)	Outside compound	Chancery					
		Floor	Room	Direction windows faced*	Working hours From To	Place Hours From To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee													
Spouse													
Children													
Dependents (In-laws, maids, etc.)													

* North — toward Gorky Street
South — toward Katusovsky
East — toward Tchaikovsky Street
West — toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, or only one assignment, please skip to page 6.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 3, 4, 5 are provided, please use a blank sheet if more than 3 tours in Moscow.)

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date ____________ Ending date ____________

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) ____________

	Name (Last name only when different from employee)		Working area (Normal business hours) – Chancery					Compound (Outside main office building)			Outside compound	Living quarters – Chancery				Total weeks away from post **	Total months at post (This assignment)
	First	M.I.	Floor	Room	Direction windows faced*	Working hours From	To	Place	Hours From	To	Place (Specify)	Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*		
Employee																	
Spouse																	
Children																	
Dependents (In-laws, maids, etc.)																	

* North – toward Gorky Street
South – toward Katusovsky
East – toward Tchaikowsky Street
West – toward the Snack Bar

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

A 7 p 5.

A 20 51

11. **LOCATION OF WORKING AREA AND LIVING QUARTERS IN MOSCOW:** This includes temporary duty. (If never assigned to Moscow, or only two assignments, please skip to page 6.) Please use a separate sheet for each duty assignment in Moscow starting with the most recent. A separate sheet should also be filled out for each change in location of working area or living quarters. (Pages 3, 4, 5 are provided, please use a blank sheet if more than 3 tours in Moscow.

a. This duty tour: Period of time spent in Moscow (Mos. & yrs.) Beginning date _____ Ending date _____

b. Please complete table below with as much information as possible and use as many separate sheets as necessary.

c. Occupation at this time (If Q. 11 is YES) _____

	Name (If not same only when different from employee) First M.I.	Working area (Normal business hours) Chancery Floor	Room	Direction windows faced*	Working hours From To	Compound (Outside main office building) Place Hours From To	Outside compound Place (Specify)	Living quarters Chancery Wing (Central, North, South)	Floor	Apt. No.	Direction windows faced*	Total weeks away from post **	Total months in post (This assignment)
Employee													
Spouse													
Children													
Dependents (in laws, maids, etc.)													

* North -- toward Gorky Street
South -- toward Kutuzovsky
East -- toward Tchaikovsky Street
West -- toward the Smolensk Sq

** Vacation, leave, boarding schools, temporary duty elsewhere, etc.

12. DUTY ASSIGNMENTS TO FOREIGN EMBASSIES: (If never assigned to one of the following embassies, skip to page 6.) (If more than 6 assignments, please use a separate sheet.)

a. Please indicate the embassy or embassies you have been assigned to by checking the appropriate box(es).
b. Complete the table below for each different post assignment starting with the most recent, and please include the information for all dependents living with you at each post.
c. OCCUPATION (EMBASSY) _____
OCCUPATION (EMBASSY) _____

- ☐ Budapest
- ☐ Leningrad
- ☐ Prague
- ☐ Warsaw
- ☐ Belgrade
- ☐ Bucharest
- ☐ Sofia
- ☐ Zagreb

	Name (If not same only when different from employee) First M.I.	Time Period Served at Embassy (Months and Years)											
		Embassy _____ Beginning date _____ Ending date _____		Embassy _____ Beginning date _____ Ending date _____		Embassy _____ Beginning date _____ Ending date _____		Embassy _____ Beginning date _____ Ending date _____		Embassy _____ Beginning date _____ Ending date _____		Embassy _____ Beginning date _____ Ending date _____	
		Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)	Total weeks away from post*	Total months at post (This assignment)
Employee													
Spouse													
Children													
Dependents (in laws, maids, etc.)													

*Vacation, leave, boarding schools, temporary duty elsewhere, etc.

A 7pse

Do you, or does anyone in your family (spouse or children) have any significant health problems that you wish to report?

NAME	RELATIONSHIP TO EMPLOYEE	PROBLEM

App 53

A 10 p 1

APPENDIX 1-A

THE JOHNS HOPKINS UNIVERSITY

DEPARTMENT OF EPIDEMIOLOGY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

615 North Wolfe Street • Baltimore, Maryland 21205

SPECIAL LETTER

In epidemiological studies where one is attempting to determine if a specific environmental agent has an effect on the health of any group of individuals, it is essential to compare the group exposed to the selected environmental agent with another group not so exposed. Without the benefit of a comparison between an exposed and an unexposed group, one cannot draw valid scientific conclusions about the mortality, morbidity, and/or health effects of any given environmental agent.

Sincerely,

Charlotte Libauer

Charlotte Libauer
Research Associate
Department of Epidemiology

CL/cdf

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A10p2

APPENDIX 1-B

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CASE - COUPLES

I want to take this opportunity to thank you for returning the completed questionnaire and for your cooperation with the biostatistical and epidemiological survey of the possible health effects of microwave radiation. As you know, the Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to conduct this important study.

In our last letter, you may recall, it was indicated that you would be receiving an additional questionnaire. We are now enclosing two, one for you and one for your spouse. Would each of you please complete the questionnaires and return them as soon as possible together with your signed authorizations in the envelope provided.

To insure a valid study and to have as complete a health status profile of you as possible it would be extremely helpful to have copies of any current medical records you may have in your possession.

Please continue to be assured that any and all data obtained will be privileged information and held in the strictest confidence and that our reports which will be a statistical analyses, will not in any way identify individuals.

If the questionnaire does not allow sufficient space for your answer to any item, please continue on a separate sheet of paper and attach it at the end of your completed questionnaire.

Thank you once again for your continued cooperation.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

APPENDIX 1-C

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CASE - DEPENDENT

You may well be aware that there has been a great deal of speculation regarding the living and working conditions of United States Government employees at the American embassy in Moscow. The Department of State is concerned about the possible effects of microwave transmissions that the Soviets were beaming at the embassy.

Therefore, the State Department has contracted with The Johns Hopkins University, School of Hygiene and Public Health to do a biostatistical and epidemiological survey of the possible health effects of microwave radiation. To conduct this study, it will be necessary to evaluate the medical history and health experiences of past and present employees at the embassy in Moscow and it is equally as important to obtain similar information from all dependents who were living with them in Moscow.

Considerable work has been done on this project and we are now attempting to locate all former and present dependents who were at the Moscow embassy between the years 1950 and 1976, such as spouses, in-laws, nephews and maids; including as well all children who were born either prior to, during or after the tour of duty in Moscow.

We ask you to cooperate by completing and returning the Health Status Questionnaire as soon as possible together with your signed authorization in the envelope provided.

To insure a valid study and to have as complete a health status profile of you as possible, it would be extremely helpful to have copies of any current medical records you may have in your possession. Please be assured that any and all data is privileged information and that our reports which will be a statistical analyses will not in any way identify individuals.

Thank you very much for your cooperation and for your prompt attention to our request.

Sincerely,

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

A 10 p4

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CASE - SINGLE

I want to take this opportunity to thank you for returning the completed questionnaire and for your cooperation with the biostatistical and epidemiological survey of the possible health effects of microwave radiation. As you know, the Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health, to conduct this important study.

In our last letter, you may recall, it was indicated that you would be receiving an additional questionnaire. Would you please complete the enclosed questionnaire and return it as soon as possible together with your signed authorization in the postage-paid envelope provided.

To insure a valid study and to have as complete a health status profile of you as possible it would be extremely helpful to have copies of any current medical records you may have in your possession.

Please continue to be assured that any and all data obtained will be privileged information and held in the strictest confidence and that our reports which will be a statistical analyses, will not in any way identify individuals.

Thank you once again for your continued cooperation.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CONTROL - COUPLES

I want to take this opportunity to thank you for returning the completed questionnaire and for your cooperation with the biostatistical and epidemiological survey of the possible health effects of microwave radiation. As you know, the Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to conduct this important study.

In our last letter, you may recall, it was indicated that you would be receiving an additional questionnaire. We are now enclosing two, one for you and one for your spouse. Would each of you please complete the questionnaires and return them as soon as possible together with your signed authorizations in the envelope provided.

To insure a valid study and to have as complete a health status profile of you as possible it would be extremely helpful to have copies of any current medical records you may have in your possession.

Please continue to be assured that any and all data obtained will be privileged information and held in the strictest confidence and that our reports which will be statistical analyses, will not in any way identify individuals.

May we also remind you once again of the importance of the participation of those who served at Eastern European embassies and of the value of the information they can provide which is essential for a comparison of the health experiences of embassy employees.

If the questionnaire does not allow sufficient space for your answer to any item please continue on a separate sheet of paper and attach it at the end of your completed questionnaire.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

A 10 p 6

APPENDIX 1-F

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CONTROL - DEPENDENT

You may well be aware that there has been a great deal of speculation regarding the living and working conditions of United States Government employees at the American embassy in Moscow. The Department of State is concerned about the possible effects of microwave transmissions that the Soviets were beaming at the embassy.

Therefore, the State Department has contracted with The Johns Hopkins University, School of Hygiene and Public Health to do a biostatistical and epidemiological survey of the possible health effects of microwave radiation. To conduct this study, it will be necessary to evaluate the medical history and health experiences of past and present employees and their dependents at the embassy in Moscow and it is equally as important to obtain similar information from all individuals assigned to Eastern European embassies for a comparison.

Considerable work has been done on this project and we are now attempting to locate all former and present dependents who were at Eastern European embassies between the years 1950 and 1975, such as spouses, in-laws, nephews and maids; including as well all children who were born either prior to, during or after the relevant tour of duty.

We ask you to cooperate by completing and returning the Health Status Questionnaire as soon as possible together with your signed authorization in the envelope provided. May we remind you of the importance of the participation of individuals who served at Eastern European embassies and of the value of the information they can provide which is essential for a comparison of the health experiences of embassy employees.

To insure a valid study and to have as complete a health status profile of you as possible, it would be extremely helpful to have copies of any current medical records you may have in your possession. Please be assured that any and all data is privileged information and that our reports which will be a statistical analyses will not in any way indentify individuals.

If more space is required to answer any item, continue on a separate sheet of paper and attach it at the end of your completed questionnaire.

Thank you very much for your cooperation and for your prompt attention to our request.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D, M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

A 10 p 8

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

CONTROL - SINGLE

I want to take this opportunity to thank you for returning the completed questionnaire and for your cooperation with the biostatistical and epidemiological survey of the possible health effects of microwave radiation. As you know, the Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to conduct this important study.

In our last letter, you may recall, it was indicated that you would be receiving an additional questionnaire. Would you please complete the enclosed questionnaire and return it as soon as possible together with your signed authorization in the postage-paid envelope provided.

To insure a valid study and to have as complete a health status profile of you as possible it would be extremely helpful to have copies of any current medical records you may have in your possession.

Please continue to be assured that any and all data obtained will be privileged information and held in the strictest confidence and that our reports which will be statistical analyses, will not in any way identify individuals.

May we also remind you once again of the importance of the participation of those who served at Eastern European embassies and of the value of the information they can provide which is essential for a comparison of the health experiences of embassy employees.

Thank you once again for your continued cooperation.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

Worksheet to Determine Approximate Maximum Exposure to Non-Ionizing Electromagnetic Radiation During Assignment to AmEmbassy Moscow

Period covered: From_____19__ to_____19___ Date of Worksheet_____19___

Pre-May 1975					Post May 1975				
WORKING AREA EXPOSURE					**WORKING AREA EXPOSURE**				
Wing	Windows facing	Floor	Exposure $\mu w/cm^2$*	Duration hrs/day	Wing	Windows facing	Floor	Exposure $\mu w/cm^2$*	Duration hrs/day
Chancery	West, South	B,G,***	Background**	---	Chancery	East, South	B,G,***	Background**	---
Chancery	West, South	7,8,9,10	1-5	9	Chancery	East, South	7,8,9,10	1-15	18
Chancery	All others		Background	---	Chancery	All others		Background	---
Outside	Chancery		Background	---	Outside	Chancery		Background	---
LIVING AREA EXPOSURE					**LIVING AREA EXPOSURE**				
Central	West	B,G,2,3	Background	---	Central	East	B,G,2,3	Background	---
Central	West	4,5	0-1	9	Central	East	4,5	0-1	18
Central	West	6,7	1-5	9	Central	East	6	1-2	18
Central	All others		Background	---	Central	All others		Background	---
North	West, South	B,G,2,3	Background	---	North	East	B,G,2,3	Background	---
North	West, South	4,5	0-1	9	North	East	4,5,6	0-1	18
North	West, South	6	1-3	9	North	All others		Background	---
North	All others		Background	---					
South	North, West	B,G,2,3	Background	---	South	East, South	B,G,2,3	Background	---
South	North, West	4,5	0-1	9	South	East, South	4,5	0-1	18
South	North, West	6,7	1-5	9	South	East, South	6,7	1-2	18
South	All others		Background	---	South	All others		Background	---
Outside	All	All	Background	---	Outside	All	All	Background	---

* $\mu w/cm^2$ = microwatts per square centimeter.
** "Background", radiation is the level to which populace in the general area are exposed, without regard to the special signals.
*** Includes all compound offices on ground floor.
Note: The "exposure" and "duration" values are approximate maximums which an individual could have received if he remained directly in the beam for the entire time it was on the air. In general, individual exposures were much less than the maximum.

Name_____,_____,___ Date of Birth_____19___ Reference request of_____
Last First MI

Approximate Maximum Exposure_____ $\mu w/cm^2$ for a maximum of_____
hrs/day between the frequencies of approximately 0.5 GHz and 9 GHz.

This is sheet____ of_____ sheets on this person.

15376

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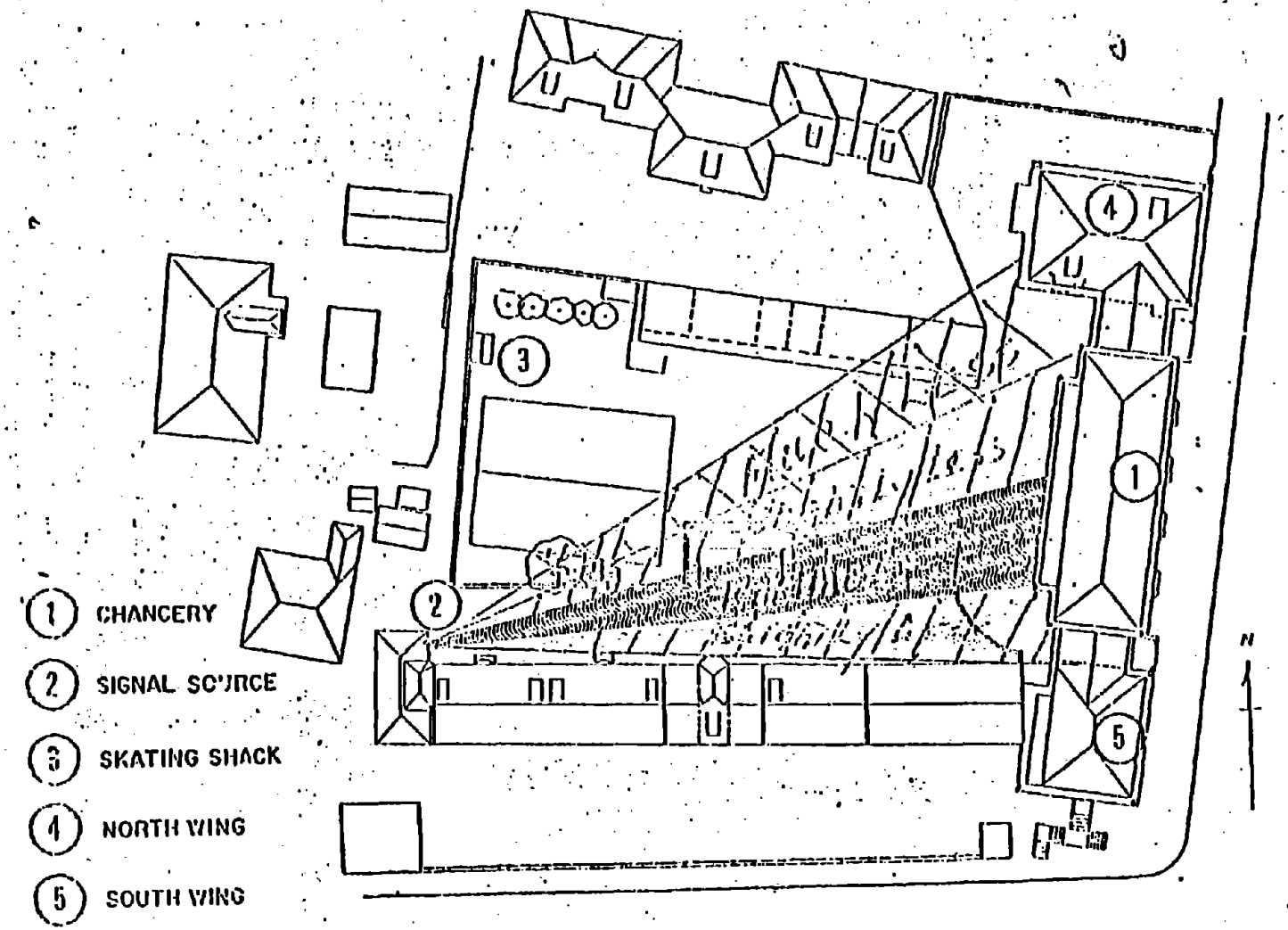
A Map 2

KALININA PROSPEKT
CHAYKOVSKOGO
South
East
U.S. EMBASSY
VORONSKOGO
KUDRIN
GERTSENA
GARRIKADNAYA

4 11 p 3



PLAN VIEW OF EMBASSY COMPOUND AND SURROUNDING AREA.
SCALE: APPROX. 1 : 1000

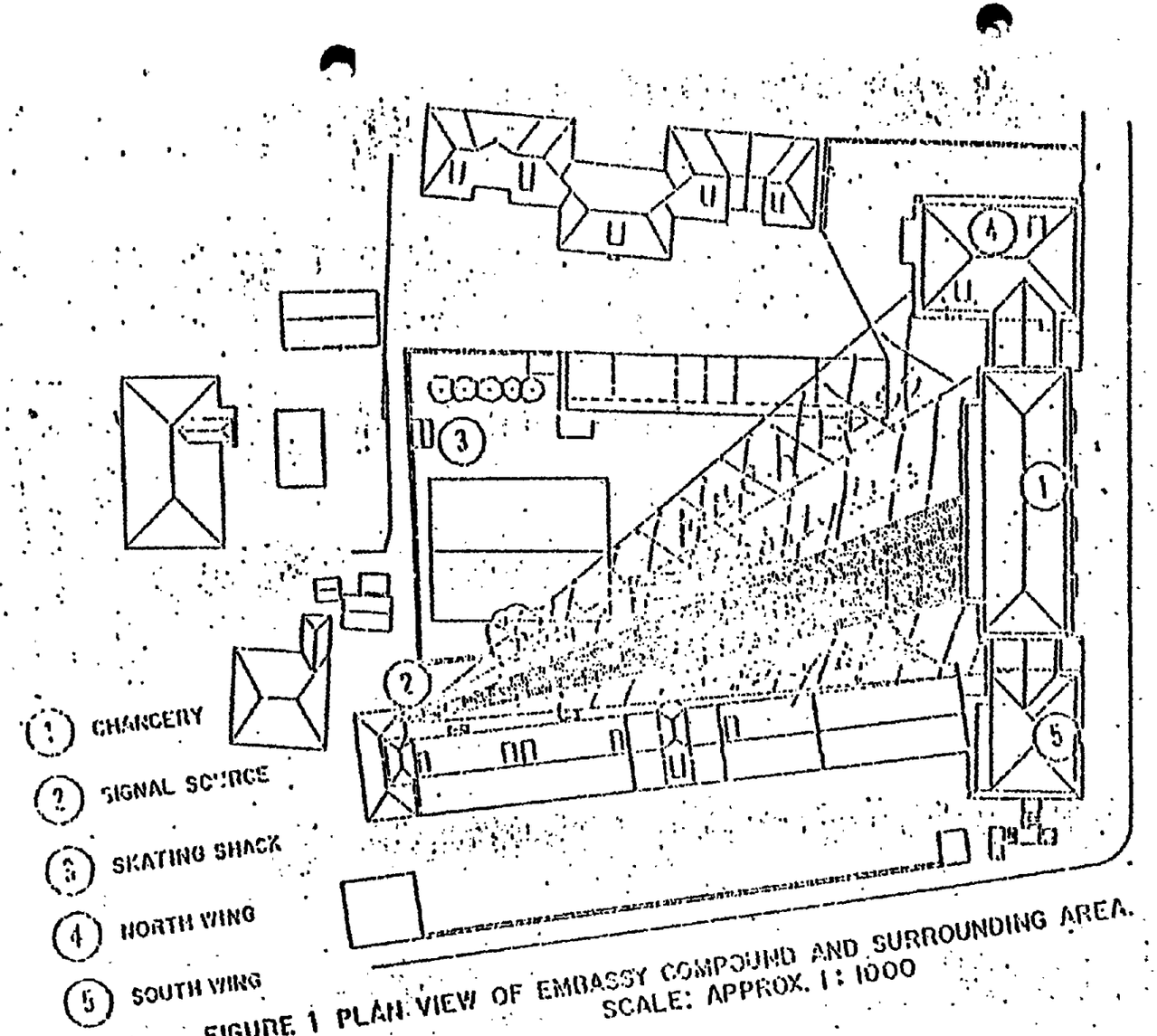


FIGURE 1 PLAN VIEW OF EMBASSY COMPOUND AND SURROUNDING AREA.
SCALE: APPROX. 1 : 1000

A11-P4

APPENDIX 11

Date Received: 10/17/78

Additional Information on Microwave Exposure

The time periods on the worksheet in this Appendix require clarification. It should be noted that they are divided into two periods: one, prior to May, 1975 and the other, after May, 1975. Actually, the dividing date of these two time periods was May 30, 1975.

The following statement is a further amplification of the characteristics of the microwave beams:

The signals were all directed at the upper floors of the south and east facade of the central building. Thus signal levels decreased as one moved to the lower floors or to the north and south wings. The various "exposure" and "duration" values given on page 2 of the text are approximate maximums as measured at or near windows of the upper central building. Polarization of signals typically varied throughout a given room. In general, individual exposures would have been much less than these maximums because of location away from a window or movement to other rooms or floors and the fact that some hours of signal operation were at night. "Background" levels existing when signals were off would be lower than maximum signal levels by at least a factor of one thousand.

Relative power levels and operating times of the original signal from the west were recorded nearly continuously from early 1963 using a microwave antenna, a detector, an amplifier, and a strip chart recorder. The relative power levels did not vary appreciably during a given period of operation or from day to day. Thus average power and peak power during operating periods were essentially identical. The operation spectrum consisted of seven or fewer bands of noise, each a few MHz in width

A11p6

distributed between the limits of approximately 2.5 GHz and 4.0 GHz. The frequencies were often verified using conventional receivers. Absolute power levels were checked using suitable antennas with either calibrated receivers or power meters. Prior to 1963 the presence of the signal was noted during certain routine checks. However, no continuous recordings, power measurements or detailed spectrum information were obtained.

Similarly, relative power levels and operating times of the newer signals from the east and south were recorded nearly continuously using antennas, filters, detectors, amplifiers, and strip chart recorders. Again, the relative total power levels did not vary appreciably during given periods of operation or from day to day. Thus average power and peak power during operating periods were essentially equal. Frequencies were checked using commercial receivers and absolute power levels frequently measured using an appropriate antenna and power meter. The operating spectrum consisted of a nearly continuous band of noise between the limits of 0.5 and 10 GHz with the highest amplitude typically between 2 and 3 GHz.

A 12 p 1

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

Re:

The Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to do a biostatistical and epidemiological survey of the possible health effects of microwave transmissions at the American Embassy in Moscow. To conduct this study, the medical histories of employees and their dependents at the embassy in Moscow will be compared with those of individuals assigned to Eastern European embassies.

As part of the study, each participant was asked to complete a questionnaire requesting information about hospitalizations. The above named participant indicated having been at your hospital one or more times since 1953. To insure a valid scientific study, we ask your cooperation in providing us with the patient's discharge summary sheet. If it is more convenient, you may complete the enclosed form indicating the discharge diagnoses for the dates reported by the patient. If the patient had any hospitalizations other than those indicated on the form, we would appreciate your recording the dates and discharge diagnoses.

Please send us a bill if any service charge is incurred in providing us with this information. Enclosed is a copy of the patient's authorization to furnish hospital information. We will be happy to reimburse you for air mail postage upon receipt of the returned hospital information.

Please be assured that all information obtained will be held in the strictest confidence and that our reports, which will be statistical analyses, will not in any way identify individuals.

Thank you very much for your cooperation.

Sincerely,

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

AML/am
Enclosures

A11 p2

oreign Service Health
Status Study

CONFIDENTIAL
The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

udy Number _____

Client:
Name _____
Last First Middle Maiden

Date of Birth _____
Date of Death _____
Social Security Number _____

Hospital:
Name _____

Address _____

_____

HOSPITALIZATIONS*

Date of Discharge (Mo.&Yr.)	Discharge Diagnoses	Indicate ICDA-Code if diagnosis is coded

For any other hospitalizations as of 1953, please record the dates and discharge diagnoses.

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THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

Re:

The Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to do a biostatistical and epidemiological survey of the possible health effects of microwave transmissions at the American Embassy in Moscow. To conduct this study, the medical histories of employees and their dependents at the embassy in Moscow will be compared with those of individuals assigned to Eastern European embassies.

As part of the study, each participant was asked to complete a questionnaire requesting information about physician visits. The above named participant indicated having been under your care one or more times since 1953. To insure a valid scientific study, we ask your cooperation in providing us with a list of the patient's diagnosed conditions. If it is more convenient, you may complete the enclosed form indicating diagnosed conditions for the dates reported by the patient.

Enclosed is a copy of the patient's authorization to furnish medical records. We will be happy to reimburse you for air mail postage upon receipt of the returned medical records.

Please be assured that all the information obtained will be held in the strictest confidence and that our reports, which will be statistical analyses, will not in any way identify individuals.

Thank you very much for your time and cooperation.

Sincerely,

A. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service Professor
of Epidemiology

AML/am
Enclosures

A 11-p 4

Foreign Service Health
Status Study

CONFIDENTIAL
The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

Study Number _____

Client:
Name _____
Last First Middle Maiden

Date of Birth _____

Date of Death _____

Physician:
Name _____

Address _____

_____

PHYSICIAN VISITS

Date of Visit (Mo.Day.Yr.)	Diagnosed Conditions

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THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

Re:

The Department of State has contracted with The Johns Hopkins University, School of Hygiene and Public Health to do a biostatistical and epidemiological survey of the possible health effects of microwave transmissions at the American Embassy in Moscow. To conduct this study, the medical histories of employees and their dependents at the embassy in Moscow will be compared with those of individuals assigned to Eastern European embassies.

As part of the study, each participant was asked to complete a questionnaire requesting information about clinic visits. The above named participant indicated having been at your clinic one or more times since 1953. To insure a valid scientific study, we ask your cooperation in providing us with a list of the patient's diagnosed conditions. If it is more convenient, you may complete the enclosed form indicating the diagnosed conditions for the dates reported by the patient. If the patient had any clinic visits other than those indicated on the form, we would appreciate your recording the dates and diagnosed conditions.

Please send us a bill if any service charge is incurred in providing us with this information. Enclosed is a copy of the patient's authorization to furnish medical records. We will be happy to reimburse you for air mail postage upon receipt of the returned medical records.

Please be assured that all information obtained will be held in the strictest confidence and that our reports, which will be statistical analyses, will not in any way identify individuals.

Thank you very much for your cooperation.

Sincerely,

A. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service
Professor of Epidemiology

AML/am
Enclosures

A 11 p 6

CONFIDENTIAL

Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

Study Number _____

Patient:
Name _____
Last First Middle Maiden

Date of Birth _____

Date of Death _____

Clinic:
Name _____

Address _____

_____

CLINIC VISIT*

Date of Visit (Mo.&Yr.)	Diagnosed Conditions

* For any clinic visits as of 1953, please record the dates and diagnosed conditions.

A 11 p 7

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

Thank you for your continued cooperation with our biostatistical and epidemiological study of the possible health effects of microwave transmissions. In processing your health history questionnaire, it came to our attention that your authorization form was not signed.

In order to insure a valid scientific study, comparisons on mortality, morbidity, and health effects must be made between exposed and unexposed groups. At some point we may want to secure your medical records from physicians, hospitals, and clinics. To do so, we must have your signed authorization.

We have enclosed another authorization and hope you will cooperate by signing and returning it in the enclosed postage-paid envelope.

Thank you once again for your time and cooperation.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service
Professor of Epidemiology

AML/ay

Enclosure

4 11 pp 8

THE JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY

615 North Wolfe Street • Baltimore, Maryland 21205

Thank you for your continued cooperation with our biostatistical and epidemiological study of the possible health effects of microwave transmissions.

In order to insure a valid scientific study, comparisons on mortality, morbidity, and health effects must be made between exposed and unexposed groups. At some point we may want to secure your medical records from physicians, hospitals, and clinics. To do so, we must have your signed authorization.

We have enclosed an authorization and hope you will cooperate by signing and returning it in the enclosed postage-paid envelope..

Thank you once again for your time and cooperation.

Sincerely,

Abraham M. Lilienfeld

Abraham M. Lilienfeld, M.D., M.P.H., D.Sc.
University Distinguished Service
Professor of Epidemiology

AML/ay

Enclosure

A-4 p. 1

Foreign Service
Health Status
Study

The Johns Hopkins University
School of Hygiene and Public Health
Department of Epidemiology

A. EMPLOYEE: DATE _____

1. Name

_____
Last First Middle Maiden

2. Current Address

_____
Street City State Zip

3. Date of Birth _____ 4. Social Security No. _____

B. EMPLOYMENT HISTORY:

Please list your dates (month and year) of service for each tour of duty at any of the following embassies since 1950.

	From	To	From	To	From	To
Moscow						
Budapest						
Prague						
Warsaw						
Leningrad						
Belgrade						
Bucharest						
Sofia						
Zagreb						