CHAPTER V

HUMAN VOLUNTEER SELECTION AND SCREENING

General

The purpose of this chapter is to address the implementation of the Human Volunteer Program, to include recruiting and the thoroughness of the medical screening of volunteers.

As mentioned previously, volunteers have served the medical element of the U.S. Army Chemical Research and Development Laboratories since the establishment of the Medical Division in 1922.[1] Records indicated that prior to World War II the volunteers were employees of Edgewood Arsenal who usually were part of the various research test projects. During World War II there was large-scale use of volunteers at various test sites throughout the United States. Following World War II human volunteer resources were apparently met as they were prior to the war, i.e., by local assigned personnel. This was the case until May 1955 when the first contingent of the formal volunteer program arrived at Edgewood.[2] Very little is known about the recruiting methods, medical screening procedures, and utilization of the volunteers prior to 1955; nor was it determined if this void was the result of routine destruction of records or if there were simply fewer and less complete records maintained. It is probable that the Nuremberg Trials had a significant impact on the thoroughness with which research records were maintained. As discussed in Chapter IV, the Armed Forces Medical Policy Council established the rules of the Nuremberg Code as an essential part of future medical research involving the use of human subjects when in 1952 they recommended that the Secretary of Defense permit the use of humans in medical research.

Secretary of Defense Wilson's memorandum to the service secretaries in February 1953 established the procedures to obtain authority to conduct research with chemical agents involving human volunteers. However, program initiative still rested with the laboratory. It was the responsibility of the research investigator to justify the need to use humans in experimentations. There was evidence that this responsibility was not new to the Chemical Corps medical investigators, nor was it taken lightly. In fact, months before the Secretary of the Army had approved implementing instructions, the Chemical Corps Advisory Council was considering the impact of the new requirements the Nuremberg Code placed on them. On 20 and 21 March 1953 the Chemical Corps Advisory Council met at Edgewood Arsenal to consider these medical and related problems.[3] The Council members noted that human experimentation within

the practice of medicine had been conducted for a long period of time, although usually on severely ill patients who went to a doctor for help. The Council stressed that the problems confronting the Chemical Corps were entirely different in that experiments would be performed on normal, healthy individuals and subjecting them to a certain degree of danger. Thus, they allowed that careful consideration had to be given and safeguards established in terms of the moral, ethical, and technical aspects of the problem of using humans. They reported that basic decisions would have to be made regarding the type of experimental work which was feasible and correct; the rules of conduct which would be followed to create the maximum safeguards; and the procedures which would be established to determine whether the information to be obtained would justify the risk involved. Following these considerations they reported that the practical problem of how to obtain a steady flow of human volunteers would have to be addressed.

The Council (which consisted of both military and nonmilitary members) discussed numerous problem areas, many of which are prevalent today. The Chairman of the Council (a civilian medical doctor) opined that "certain problems must be considered more adequately if normal subjects are to be used in experiments, the purpose of which is not to benefit the subject or people with disease, but to aid in military matters. The experimenter in each instance must be a physician, and, in view of the moral and ethical practices embodied in the Hippocratic Oath, it will be extremely difficult for the physician to judge, in an unbiased manner, the type of experiment to be performed and what the possible hazards are to the patient. From that point of view, consideration must be given to methods of choosing experimental subjects, what regulations govern the divulging of information to volunteer subjects as to the hazard involved, and whether or not that should, in any way, be the responsibility of the physician directly involved in the experiment." They also discussed the need to define "nonhazardous" experiments and those which may be hazardous to a degree and which would be considered line-of-duty (such as troop gas chamber exercises). The Council also recognized the need for a clear and overall set of fundamental principles, so that a proposed plan for experimentation could be evaluated in terms of those criteria, thereby avoiding individual decisions which would eventually result in a wide range of standards. Although there was no direct evidence to indicate the impact that this Council had on formulating future policy, it is apparent from the subject matter discussed that they had considerable expertise in the field of chemical and medical research, especially as it would involve human volunteers. The implementing authority, Chief of Staff Memorandum 385, for use of volunteers in research was published by the Army Chief of Staff on 30 June 1953.[4] This document set forth eleven basic principles for the use of human volunteers in research:

a. The voluntary consent of the human subject is absolutely essential and must be obtained in writing with a proper witness.

b. The experiment must be such as to yield results essential to the Army or for the good of society, unprocurable by other methods.

c. The experiment must be based on animal experimentation and knowledge of the problem so that the anticipated results will justify performance of the experiment.

d. The number of medical volunteers used shall be the minimum required to obtain the essential data.

e. The experiment will be conducted so as to avoid all unnecessary physical and mental suffering and injury.

f. No experiment will be conducted if there is any reason to believe that death or disabling injury may occur.

g. Proper precautions will be made and adequate facilities provided to protect the medical volunteer against all foreseeable possibilities of injury, disability, or death.

h. The experiment will be conducted only by scientifically qualified persons and the medical care of the volunteers supervised by a qualified physician.

i. The physician in charge must be prepared to terminate the experiment at any stage if he has any cause to believe continuation may result in injury, disability, or death.

k. The medical volunteer must be informed that at any time during the course of the experiment he has the right to revoke his consent and withdraw from the experiment, without prejudice.

l. Use of prisoners of war in human experimentation is prohibited under any circumstances.

The greatest emphasis in terms of detailed guidance was placed on the first of these principles, i.e., volunteer consent, which will be discussed in depth in Chapter VI.

A request to conduct experiments with nerve gases on volunteers was submitted in August 1953. Permission was granted in November 1953, however, it did not provide for a source of volunteer subjects. On 12 March 1954 The Surgeon General prepared a set of principles, policies, and rules for

for the use of human volunteers in medical research. With four exceptions, these principles generally were the same as those published in Chief of Staff Memorandum 385. The first rule was in the form of expanded guidance regarding volunteer consent. Next, rules 7 and 8 of the Chief of Staff Memorandum 385 guidance were expanded as follows: "Adequate preparations should be made and adequate facilities provided to protect the experimental subject against even remote possibilities of injury, disability or death. This includes hospitalization and medical treatment as may be required. The experiment should be conducted only by scientifically qualified persons (including an adequately trained physician) who shall be required to exercise the highest degree of skill and care throughout the experiment. Competent consultants should be available on short notice in this connection." Finally, there was included an additional rule: "Agents used in research must have the following limiting characteristics: controllable lethality; no serious chronocity anticipated; effective therapy available; and adequate background or animal experimentations." These were not intended to replace the rules set forth in the basic policy (Chief of Staff Memorandum 385), but rather to clarify their intent.[5]

Prior to this, in April 1953, the Chemical Corps Advisory Council recommended a system be developed to provide a pool of volunteers for chemical warfare research at the Army Chemical Center (Edgewood Arsenal).[6] This problem was again discussed by the Medical Committee of the Chemical Corps Advisory Council on 30 September 1954. The report of that meeting indicated a request for a continuing supply of volunteer subjects had been submitted to the Office of the Secretary of the Army and the official in charge of manpower in the Office of the Secretary of the Army had expressed approval of the request. Thus, favorable action was reportedly anticipated in time to have volunteers available by January 1955. It was further recorded that if such military volunteers were not supplied, the Medical Laboratories would have to continue obtaining a sporadic source of volunteers, both military and civilian, from the personnel of the Army Chemical Center. This comment was attributed to the Chief of the Clinical Research Division, Medical Laboratories, and is interpreted to mean that between the time formal approval for the use of volunteers was granted in November 1953 and the time of the Committee meeting (September 1954), volunteers were recruited from personnel assigned to Edgewood Arsenal. There were no volunteer medical records found which would corroborate this assumption. However, witnesses contacted during the inquiry stated such records normally were not kept for volunteers from the laboratory.

The Committee report also contained a statement that: "The Laboratories drew up a formal program and submitted it to the Secretary of the Army for approval (referring to the 7 August 1953 request for approval to test nerve agents in humans); approval for the plan had been received (referring to the 5 November 1953 approval by Secretary Stevens)." This program

reportedly visualized four types of studies for human volunteers. "The first category consists of planned, hazardous experiments where there is a clear-cut risk, but with intelligent, adequate supervision, safeguards, and adequate therapy available, it is felt that no irrevocable damage will be done. Experiments will not be attempted where such damage can be foreseen. These form the type of experiments for which the Army Secretary's approval has been received and the only kind where such approval is required. Another category includes risk of accidental exposure to hazardous degree. The fullest possible studies should be made of any such unplanned exposures. The third category consists of experiments that are only potentially but not definitely hazardous. The experiments would be hazardous if the individual, despite previous examination and check-up, should prove unusually sensitive, or if there occurs an accidental error or break in technique. The fourth category of procedures will be those designated non-hazardous, experiments involving no hazard greater than that of crossing a highway."[7]

Preparation for Volunteer Recruitment

On 13 October 1954 the Commander of the Chemical Corps Medical Research Laboratories submitted a request to the Commanding General, Chemical Corps Research and Engineering Command to establish a procedure for the recruitment of military volunteers for use in medical research associated with chemical warfare.[8] This request recommended establishment of an Army-wide volunteer recruitment program that would provide the Medical Research Laboratory a continuous flow of 20 volunteers per month. The request was forwarded to the Chief Chemical Officer, Department of the Army, on 13 October 1954. Based on a recommendation from the Office of The Surgeon General, the Medical Research Laboratory's proposal was disapproved in favor of a less expensive plan.[9] The alternate plan suggested that specific installations, such as Fort Meade, be contacted and the groundwork laid, through The Surgeon General's representative at each station, to obtain approval of the local commander to recruit volunteers from his installation. On 25 January 1955 the Army Chemical Center (Edgewood Arsenal) published the first known Standard Operating Procedure (SOP) dealing with military volunteers for chemical warfare.[10] The stated purpose of this memorandum was to outline the procedures for processing of military volunteers for medical research conducted at the Army Chemical Center by the Chemical Corps Medical Laboratories. The directive provided for the recruitment of volunteers from Second Army Headquarters at Fort Meade, MD, for temporary duty (TDY) at Edgewood Arsenal. The volunteers were to be provided administrative support, rations, quarters, and supplies upon arrival. Following these arrangements, volunteers were scheduled for physical examination and orientation relative to the test program. The directive also allowed the Medical Laboratory

staff to retain the volunteer for observation and treatment beyond the normal attachment, if necessary. No mention was made of the details of the physical/mental examinations to be given prior to the volunteer's acceptance into the program or of a follow-up examination at the completion of his temporary duty.

Records found at Edgewood Arsenal indicated that during the period 9-23 January 1955 the Chemical Corps Medical Research Laboratories and the Aero Medical Laboratory, Wright-Patterson Air Force Base, conducted a joint research project at Wright-Patterson Air Force Base to investigate "Carbon Monoxide Gassing of Human Volunteers."[11] No authority for the conduct of this experiment was found during the inquiry. If approval was not sought because the test was considered "only potentially, but not definitely hazardous," and thus according to the earlier interpretation not requiring Secretary of the Army approval, it would have indicated, as a minimum, a propensity towards a liberal interpretation of policy. Also, it is possible that approval was obtained through U.S. Air Force channels, although no records of this were retained or found in the laboratory files. However, records were found which indicated that the Army Medical Laboratories supplied 10 volunteer subjects for the project; individual medical records for these volunteers were not located.

In late February 1955 the Medical Research Laboratories began their preparation for recruiting volunteers from Fort Meade by furnishing an information letter to the installation indicating the type of test planned for use of volunteers.[12] The volunteers were advised that three types of investigations would be conducted:

a. The minimum systemic and local effects of certain toxic agents, which would involve inhalation of small amounts of nerve gas. The document allowed that volunteers would be thoroughly informed about all procedures and what was to be expected during each test; every precaution would be taken to protect the volunteer against danger or serious discomfort; and physicians and other scientists who had previously been volunteer subjects would be in attendance at all times.

b. The evaluation of chemical warfare equipment, such as the testing of chemical items designed to protect the individual soldier. Testing of this equipment required wearing trials before the items were standardized.

c. Investigations involving the problems of adapting defensive items to natural human capacities, such as a manual dexterity test using protective gloves. Moreover, each volunteer was to be free to determine whether or not he desired to participate after he received a full explanation of the test procedure and he was to be free to terminate his 30-day temporary duty tour at any time.

Included with the information letter referenced above was a document titled: "Medical Research Volunteer Program," which was intended to be mandatory reading for all volunteers, and an acknowledgement that it had been read and understood was included in the "Human Volunteer Agreement" form. At the same time, the Medical Laboratory established an "Indoctrination and Screening Team" of two Chemical Corps officers and one medical officer to be responsible for selecting the qualified individuals from among the volunteers. The appointment of this team and other arrangements were made as a result of a commitment by 2nd Army Headquarters to provide 20 volunteers per 30-day period to the extent possible.[13] The letter also announced that the orientation and identification of individuals under consideration for selection would be accomplished only by personnel assigned to the Chemical Corps Research and Engineering Command. Further, 2nd Army would transmit and provide for exploitation of the preliminary recruiting material provided by the Chemical Corps. Additionally, 2nd Army would assemble prospective volunteers, as requested, for detailed orientation and final screening. However, 2nd Army would not engage directly in any aspect of the orientation and screening process. Available records indicated that during March and April 1955 Chemical Corps Medical Research Laboratories personnel developed a program in conjunction with Headquarters, 2nd Army, representatives and the chiefs of the various technical services (Quartermaster General, Chief of Engineers, etc.) to recruit, screen, and select volunteers from the 2nd Army area. On 21 April 1955 Headquarters, 2nd U.S. Army, published a directive to the installation commanders in its Army area establishing procedures for selecting volunteers.[14] The directive provided that when finally selected, the volunteer would be placed on TDY to Edgewood Arsenal for 30 days. The requirement for volunteers was established as 20 per month. The directive provided that when sufficient nominations were received, an orientation team from the Chemical Corps Research and Development Command would conduct a briefing for the volunteers. Those who still remained after the briefing would be requested to sign a volunteer participation agreement.

No direct evidence of the type medical and psychological examination given to these early participants was available, however, some newspaper articles published during the recruiting effort were located; they indicated that preliminary examinations were planned for volunteers. In March 1955 the Baltimore Evening Sun and the News-Post published articles about the upcoming experiments.[15] In these articles it was reported that the volunteers would be carefully screened for physical and psychological suitability prior to testing. In April 1955 a similar article appeared in the Army Times[16] which reported that "All volunteers would be screened carefully by three different groups to determine their physical and psychological suitability." The three groups, although not further identified, probably were: (1) the military unit, where potential volunteers were screened to insure they met the initial selection prerequisites: Intelligence (Aptitude Area I Score of 80 or above), completion of basic military training,

physical profile (a general health rating established from medical examination and recorded in the individual medical records), age group of 17 to 35, remaining service of at least six months, and have an organization and Army official record which contained no adverse information; (2) the orientation team mentioned earlier that met with the volunteers after initial screening and prior selection for travel to the Medical Research Laboratories; and (3) the doctors who examined the volunteers at the Laboratories prior to participation in experiments.

First Formal Volunteers from Second Army

The first contingent of 16 soldiers from Second Army Headquarters was reported to have arrived at the Army Chemical Center under this program on 2 May 1955.[1] A computer printout, based on data available from individual volunteer medical records, indicated that the first experimental use of these volunteers occurred on 20 May 1955.[17] A sampling of the available volunteers' records revealed that the medical examination of these early volunteers included: a standard report of medical examination; report of medical history; chest X-ray; urinalysis test; and an EKG recording. Many of the records, however, were incomplete in that they did not reflect the type of chemical agent administered to the volunteer, the method of administration of the drug, or the dosage given. It also was apparent that the original plan for medical evaluation of the volunteers did not include a final or exit type physical examination for the volunteers. However, arrangements to correct this oversight were made prior to the departure of the group that arrived in May 1955.[18] The exit examination provided during the 1955 time period appeared to consist of a chest X-ray and an exit interview. There was an indication that the purpose of the interview may have been for an evaluation of the volunteer's attitude in order to reinforce future recruiting efforts, rather than evaluation of his total medical well-being.

Volunteers from this source continued to arrive at Edgewood, during the remainder of 1955, from Fort Knox, KY, Fort Meade, MD, and Fort Monmouth, NJ.[19] Approximately 140 volunteers were received during 1955. The available records of these volunteers, which were, in most cases, incomplete, indicated that they received a medical examination, signed a volunteer statement (although not available in all cases), and were used in experimentations involving nerve and mustard gases and perhaps other agents. However, by June 1956 the number of volunteer subjects from Second Army and the various technical service installations dwindled to five or six per month. The Medical Research Laboratory stated that despite their vigorous efforts in recruitment of volunteers, troop commanders did not place sufficient priority on the program. They argued that Department of the Army should compel troop commanders to release volunteers despite shortages in other critical areas.[19] With the inclusion of psychochemical compound experimentation in 1956, the medical screening was expanded to

include a social history interview and the Minnesota Multiphasic Personality Inventory (MMPI) to exclude those volunteers who might react adversely under situations of psychological stress. Although available records were not sufficiently complete to determine exactly when these tests were included, it appears they were being employed in early 1957 and perhaps late 1956, when the first volunteer records clearly indicated the use of LSD on volunteers.

Continental Army-Wide Recruitment

In April 1957 the recruiting base was expanded to include all Army installations within the United States.[20] The Department of the Army directed Army commanders to assist in the recruitment of volunteers and to release a minimum of 30 per month on a rotating basis the six Army commanders were each given two months per year in which they would furnish volunteers). The term "Recruitment" was defined in other publications[1] as: "restricted to publicizing the program, accepting applications, and selecting a quota from among those who applied." No coercion or enticement of volunteers was permitted. The April 1957 directive held that: "The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion." It further provided that: "In all experiments involving volunteer test subjects, the individuals are thoroughly informed about all procedures, and what can be expected during each test." The Army commanders were asked to emphasize the program within their commands and to stress such matters as: the need for volunteers; thorough physical examinations; awareness of the application process; necessity of a volunteer agreement statement; quality of accommodations at the Edgewood Arsenal test site; a liberal pass policy for volunteers; availability of letters of commendation for volunteer service; and the availability of temporary duty (TDY) pay ($1.50 per day) to volunteers.[20]

The renewed emphasis placed on the recruiting of volunteers from all Army areas within the United States was apparently productive as the total volunteers received in 1957 was reported as 298 as compared to 100 for 1956.[21] Total volunteers for 1958 was reported as 383.[1] During this period (1955-1958) only two volunteers were reported as "physically unqualified."[1,21] It must be noted that official and unofficial documents discovered during the inquiry differ (in some instances considerably) in reporting the number of volunteers, and all figures are reported as the best evidence available rather than as absolute figures.

In late 1957 the Air Force agreed to furnish volunteers to the Chemical Corps. Records indicated that this practice continued until July 1961 and included approximately 350 airmen.[1]

During 1958, in addition to the normal clinical experiments conducted at Edgewood Arsenal, "field tests" were conducted with volunteers from Fort Bragg and Fort Holabird.[22] These tests will be discussed in separate chapters of this report.

Recapitulation of Volunteer Utilization - 1962

By the end of June 1962 reports indicated 2,588 volunteers had been used at Edgewood since 1955; approximately 350 of these were Air Force personnel.[1] During the same period, 49 volunteers were reported as physically unqualified; 61 had requested release from the program; 35 were reportedly returned to their units for disciplinary reasons; and 6 had refused to participate in the program after arrival at Edgewood.[1] Figures available for the "use of volunteers" showed that 11% were used in lethal agent tests; 27% in incapacitating agent tests; 13% in miscellaneous physiological tests; and 49% in material tests.

Medical Evaluation of Volunteer Subjects

Reports reflected that by 1962 volunteers spent their first three days at Edgewood receiving what was termed the most thorough physical examination they ever had. The examination, which was conducted by a physician, included chest X-ray, electrocardiogram, tests of liver and kidney function, as well as hematological tests (blood studies). The MMPI (Minnesota Multiphasic Personality Inventory) was reportedly given to all volunteers and scored by a psychologist or psychiatrist to determine behavior patterns of the volunteers. Successful completion of these tests qualified the subject for use in experiments with anticholinesterase compounds (nerve agents), riot control agents, some therapeutic drugs, and tests of protective material (which often did not involve drugs). If the volunteer passed these tests, he was given an electroencephalograph test, a personal interview with a psychiatrist, and a blood chemistry analysis. To be eligible for psychotropic drug experiments the volunteer had to successfully complete all screening tests.[1]

Post-1962 Recruiting Procedures

In March 1962 the basic guidance for "Use of Volunteers as Subjects of Research" was published in AR 70-25. In July 1962 The Adjutant General, Headquarters, Department of the Army, published a letter to the Commanding General, U.S. Continental Army Command (CONARC), subject: Use of Volunteers in Research, authorizing procurement of volunteers by recruiting from the Zone of Interior (ZI) Army areas for temporary duty periods of 60 days.[24] The screening process was changed somewhat at this time. Army area commanders would select the major installation in their area where volunteers would be recruited. The post commander would survey his troops

for potential volunteers, following which a Chemical Corps recruiting team would arrive at the post and present a briefing to an assembly of as many as 500 enlisted personnel. A follow-up Chemical Corps team would arrive later to review the medical histories of the potential volunteers and select 60 from those considered most eligible. The 60 men were placed on TDY orders to Edgewood Arsenal, where each volunteer again was given a standard physical examination without regard to the date of his last examination. Obvious medical rejects were dropped from the agent program immediately after a disqualifying finding was determined. In addition to the general physical examination, volunteers received a complete hemogram, urinalysis, serology, chest X-ray, EKG, EEG, liver and renal function batteries, psychological tests, and a psychiatric interview. The final selection of volunteers for the agent program was made by a board of medical officers who were permitted to reject volunteers who otherwise met all qualifications if, in their judgment, the subject should not be used. One report held that as of 15 December 1963, 2,863 volunteers had been available and were used in 2,279 exposures of 90 chemical agents.[24] These figures, although from official reports, cannot be considered absolute since they are in conflict with other official publications, and in some cases vary as much as 27% (Footnote 24 indicated that there were 218 volunteers available in 1957, while the publication in Footnote 1 showed 298 volunteers for the same period).

Records indicated that this volunteer selection system was still in use in July 1966 when the Commander of Edgewood Arsenal reported that, as of 1 July 1966, a total of 4,360 volunteer test subjects had been utilized in the medical research program at Edgewood Arsenal with no deaths, no injuries, and no observable residual effects.[25] On 17 January 1967 The Adjutant General, Department of the Army, again directed the Commanding General of the Continental Army Command to provide volunteers to Edgewood Research Laboratories.[26] This letter provided for the volunteers (average of 40 per month for 60 days TDY) to be medically screened by their station surgeon if a team from Edgewood could not be made available for that purpose. Otherwise, the directive was similar to those published previously.

Evaluation of Volunteers for Use in Psychochemicals

Available historical records located during the research effort indicated that a comprehensive set of Standard Operating Procedures (SOPs) was available within the Clinical Research Department of the Medical Research Laboratories. One of these SOPs, published in 1968, dealt with "volunteer screening and selection" and provided detailed guidance for the psychological/psychiatric selection of volunteers.[27] It provided guidance for screening the medical history of the volunteer, evaluation of his general aptitude (GT Score), the MMPI test, family history, and other data. The final result of the screening process was to place each volunteer in a

category of usefulness. A rating of "A" meant the volunteer was cleared for psychochemical testing; "B" meant he could receive a low-dose of psychochemicals only; "C" meant no psychochemicals could be used on the volunteer; and "D" meant the volunteer could be used for equipment tests only.

Re-Evaluation of Volunteer Requirement - 1973

In general, the process of Army area commanders providing up to 500 personnel for orientations/briefings conducted by a team from Edgewood Arsenal continued through 1973, when Army organizational changes caused a re-evaluation of the method of recruitment. However, the screening and selection process for determining which volunteers qualified for use in which experiments remained about the same.

A review of the volunteer medical record files revealed that no records were retained for the period prior to May 1955, if, in fact, records were prepared at all then; and that from 1955 through 1958 most of the records were inadequate and incomplete. Gradual improvement was noted in both record completeness and the medical screening process starting in 1959. There were some notable exceptions to this general improvement trend; one such exception was evident in the comparison of official reports for the year 1960, which indicated that in excess of 500 volunteers were used at the Medical Research Laboratories. However, only approximately 40 volunteer records actually indicated that a chemical agent was administered. Other exceptions to good record keeping and medical screening processing were apparent in the lack of records concerning the military intelligence drug testing program conducted at Edgewood during 1958-1960, and to a lesser extent, the "field tests" conducted at Forts Bragg, Benning, and McClellan. These will be discussed individually in later chapters.

The reorganization of the Army, to include formation of the Training and Doctrine Command (TRADOC) and the Military Personnel Center Command (MILPERCEN) in 1973, required the Medical Research Laboratories to renew their efforts to obtain volunteers.[28] At the request of the Office of the Chief of Research and Development, Department of the Army,[30] the Biomedical Laboratory (formerly Medical Research Laboratories) submitted a justification to continue the selection process in a manner similar to methods used prior to the reorganization, i.e., have the area or post commanders assemble troops for orientation and briefing (installations to be selected by the newly formed TRADOC); and continue to have the initial screening process to preselect approximately 80 (formerly 60) volunteers for temporary duty at Edgewood Arsenal, where the second screening process would continue to take place. Additionally, the period of TDY was requested to be raised from 60 to 90 days to allow for better utilization of the volunteers.[29]

As of 30 June 1973 records reflected that 6,408 different volunteers had been used in medical research by the Biomedical Laboratory for a total of 6,709 volunteer tours (this includes repeat tours).[31]

It appeared that the change in Army organization did have an effect on the Biomedical Laboratory's recruiting efforts, although not immediately. By January 1974 there were no volunteers available and it appeared it would take six months to reinitiate the Laboratory's systematic selection process.[32] Volunteer records indicated that the program was again in operation by May 1974;[32] it continued until 28 July 1975 when the Acting Secretary of the Army directed a temporary suspension of all testing of chemical compounds at Edgewood Arsenal using human volunteers.[33]

## FOOTNOTES

## CHAPTER V

1. CRDL Special Publication 2-51. Evolution of the U.S. Army Chemical Research and Development Laboratories Medical Research Volunteer Program, published in November 1962.

2. Briefing text, Human Investigation Facility, Directorate of Medical Research, U.S. Army Chemical Research and Development Laboratories, Edgewood Arsenal, MD, 1963.

3. AC-723 Chemical Corps Advisory Council, Medical and Related Problems Committee Meeting, 20-21 March 1953.

4. Chief of Staff Memorandum for Chief Chemical Officer and The Surgeon General (CS:385), subject: Use of Volunteers in Research, dated 30 June 1953.

5. Principles, Policies and Rules of the Office of The Surgeon General, dated 12 March 1954.

6. AC 727 Chemical Corps Advisory Council Meeting, 23-25 April 1953.

7. AC(55)S-303 Medical Committee, Chemical Corps Advisory Council, 30 September and 1 October 1954, published in September 1955.

8. Letter, subject: Recruitment of Volunteers for Research Experimentation, from the Chemical Research and Engineering Command to the Chief Chemical Officer, Department of the Army, dated 13 October 1954.

9. Same as Footnote 19.

10. Memorandum Number 11, Military Volunteers, dated 25 January 1955.

11. Letter, subject: Appreciation for Cooperation in CO Studies, from Chemical Corps Medical Laboratories to Commanding General, WADC, Wright-Patterson Air Force Base, dated 1 February 1955.

12. Letter, subject: Recruitment of Military Volunteers, dated 24 February 1955.

13. Letter, subject: Recruitment of Military Volunteers, from Second Army to Commanding General, Chemical Corps Research and Engineering Command, Army Chemical Center, MD, dated 4 February 1955.

14. Letter, subject: Enlisted Volunteers for Chemical Corps Medical Laboratories, from HQ, Second Army, to Commander, Class I and II Installations, dated 21 April 1955.

15. News Article, The Evening Sun, Baltimore, March 28, 1955, "Chemical Device Tests Stated."

16. News Article, Army Times, April 2, 1955, "Army to Test New Poisons, Equipment on 20 Volunteers."

17. Computer printout of 9 January 1976 from Biomedical Laboratory, Edgewood Arsenal, of years, agent, dose, and date of administration.

18. Disposition Form, dated 19 May 1955, subject: Human Volunteers, from Chief, P&E Office, Medical Research Laboratories, to Asst/TCW Medical Research Laboratories.

19. Memorandum for Commanding General, CMC C RDCOM, subject: Recruitment of Volunteers for CW Research, dated 6 September 1956.

20. Letter Directive, subject: Use of Volunteers in Research, from Department of the Army, Adjutant General, to Commanding Generals, ZI Armies, dated 18 April 1957.

21. CWL Special Publication 2-13, U.S. Army Chemical Warfare Laboratories Report on The Medical Research Volunteer Program, printed June 1958.

22. Meeting of the Medical Committee, U.S. Army Chemical Corps Advisory Council, 3-4 November 1958.

23. Briefing notes of 1962, titled, "Volunteer Program at CRDL." Briefing by Major General Stubbs to Deputy Secretary of Defense.

24. Briefing text 1963, Human Investigation Facility, Directorate of Medical Research, U.S. Army Chemical Research and Development Laboratories, Edgewood Arsenal, MD. Title, "Volunteer Program."

25. Letter regarding "Use of Volunteers as Subjects of Research," dated 29 July 1966, from Commander, Edgewood Arsenal, to Commanding General, U.S. Army Medical Research and Development Command.

26. Letter, subject: Use of Volunteers as Subjects of Research, dated 17 January 1967, from The Adjutant General, Department of the Army, to Commanding General, U.S. Continental Army Command.

27. Clinical Research Department SOP No. 5, dated 12 August 1968, "Volunteer Screening and Selection."

28. Chief of Staff Regulation No. 601-1 (CSR601-1), Department of the Army, Office of the Chief of Staff, dated 27 March 1973.

29. Letter, subject: Requirement for Volunteer Program, Biomedical Laboratory, Edgewood Arsenal, dated 20 September 1973.

30. Letter, subject: TDY Personnel of Use as Volunteers to Research, dated 9 October 1973, from Chief of Research and Development, Department of the Army, to Commander, U.S. Army Materiel Command and The Surgeon General.

31. Booklet titled, "Recruitement and Selection of Medical Research Volunteers," prepared in 1973.

32. Letter, subject: Recruitment of Medical Research Volunteers, from Biomedical laboratory Director, to AMC, dated 8 January 1974.

33. News release, from Office of Chief of Information, Department of Army, dated 28 July 1975.

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US Army Chemical and Biological Defense Command
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