United States Air Force Hospital
GOODFELLOW AIR FORCE BASE, TEXAS

J 700 27 March 1953

SUBJECT: Proposal for Clinical Research, AFR 30-22

TO: The Commandant
USAF School of Aviation Medicine
Randolph Air Force Base
Randolph Field, Texas

1. Under the provisions of AFR 30-22, the following clinical research proposal is submitted for consideration:

a. An increase in knowledge concerning the epidemiology and clinical aspects of coccidioidomycosis would aid in attempts to control the disease. Particular need exists for further information on the following aspects of coccidioidomycosis:

(1) Incidence of coccidioidal infections among personnel assigned to bases in known or suspected endemic areas.

(2) Incidence of symptoms among those who develop coccidioidal infections.

(3) Further clarification of the limits of endemic areas for coccidioidomycosis in the southwestern United States.

(4) Time-loss due to coccidioidomycosis among military personnel at bases in the endemic areas.

(5) Clarification of the possible immunological relationship between coccidioidomycosis and histoplasmosis.

b. Coccidioidomycosis is of importance to the United States Air Force because of the location of a number of bases in known endemic areas. Training activities at such bases result in the continual introduction of susceptibles. Previous military studies in these areas have indicated that yearly infection rates as high as 50 per 100 susceptibles may be expected. Approximately 40 per cent of individuals affected will have symptomatic infections. Because of the advisability

of prolonged hospitalization, even in patients with the mild form of the disease, the number of hospital days charged to coccidioidomycosis has been, and undoubtedly will continue to be, considerable, resulting in a high non-effective rate. Goodfellow Air Force Base, San Angelo, Texas, is located in an area endemic for coccidioidomycosis. Although it is recognized that the number of clinically diagnosed cases of coccidioidal infection is not a true reflection of the actual incidence of the disease, it should be noted that no cases have been diagnosed at this base during the last 12 months.

c. Background:

(1) The existence of the very common, benign form of coccidioidal infection has been known for only the past 15 years. During the period 1942-45, the Coccidioidomycosis Control Program carried on by the Army Air Forces Western Flying Training Command provided much valuable clinical and epidemiological data. During the past ten years, numerous publications have appeared, presenting the experience of that program in detail (e.g., Smith et al: Varieties of Coccidioidal Infection in Relation to the Epidemiology and Control of the Diseases; American Journal of Public Health, 36:1394, December, 1946). Further knowledge regarding the incidence and the clinical aspects of the disease is essential to the development of an adequate control program.

(2) Numerous other studies on coccidioidomycosis, military and civilian, were conducted during and subsequent to World War II. The more definitive studies have been conducted at installations in California. There are, however, few published reports on studies conducted in the Arizona-New Mexico-Texas area (e.g., Randolph & McMartin: Coccidioidomycosis in Phoenix, Arizona; Dis. Chest, 13:471, September-October, 1947. Emmett: Coccidioidin Sensitivity Among School Children in Phoenix; Am. J. Pub Health, 42:241, March, 1952). Further delimitation of the endemic area in the southwestern United States is desirable.

(3) Because of the occurrence of large numbers of unrecognized coccidioidal infections, definitive studies of time loss due to coccidioidomycosis among military personnel have not been possible. It is expected that a more adequate evaluation of such time loss will be provided by the proposed study.

(4) Studies conducted during the past ten years (e.g., Smith et al: Histoplasmin Sensitivity and Coccidioidal Infection; Am J Pub Health, 39:722, June, 1949) have suggested an immunological relationship between coccidioidomycosis and histoplasmosis. Clarification of this possible relationship will contribute to a better understanding of the epidemiology and pathogenesis of coccidioidomycosis.

(5) The information gained from studies on the above mentioned aspects of coccidioidomycosis may be expected to contribute to the development of more adequate measures for control of the disease.

d. Research Design:

(1) The proposed study will consist of the following:

(a) Skin testing with coccidioidin and histoplasmin of selected groups of:

1. Officers and airmen permanently assigned to this base as of the date of starting the study.

2. Officers and airmen assigned to this base subsequent to the start of the study, as soon after arrival as is feasible.

3. Student or pipeline personnel assigned to this base, when the expected duration of the tour of duty is four months or longer. Tests will be performed as soon after arrival as is feasible.

(b) Re-testing with coccidioidin and histoplasmin, at intervals, of those individuals who have previously shown negative skin reactions to coccidioidin.

1. Permanent party personnel will be re-tested at six month intervals.

2. Student or pipeline personnel will be re-tested prior to transfer from the base.

(c) Provision for clinical examination and performance of appropriate laboratory procedures for individuals who:

1. Develop positive skin reactions to coccidioidin during the course of the study.

2. Show any other clinical evidence of coccidioidal infection.

(c) Maintenance of records, for each individual included in the study, containing the following information:

1. Identifying data.

2. Residence history.

3. Results of skin tests.

(e) Maintenance of special records for individuals who develop positive skin reactions to coccidioidin, or who show any other clinical evidence of coccidioidal infection. Such records will include, in addition to the information noted in (d) above, the following:

1. Selected information concerning the patient's history of illness.

2. Results of clinical and laboratory studies.

3. Time lost due to coccidioidal infection, as represented by records of outpatient visits and hospitalization.

(f) Securing of accurate strength records for permanent party and pipeline personnel included in the study.

(2) The study will include approximately 3290 individuals permanently assigned to this base. Students or pipeline personnel to be included in the study are expected at the rate of 114 individuals every month.

(3) An analysis of the data derived from the study will provide information on these aspects of coccidioidomycosis listed under 1a above.

e. The responsible officer for this study will be Bradley W. Prior, Lt Col, USAF (MC), Base Surgeon. He has had the following

specialized training: 10 years Aviation Medicine; 13 weeks course at Tulane University in Preventive Medicine. He has had no previous publications. The principal investigator for this study will be Joseph J. Claro, Captain, USAF (MC), OIC Dispensaries. He has had the following specialized training: Primary Course, SAM, Randolph Air Force Base. He has had no previous publications. Other investigators at this base will include: 1st Lt Milton M. Haskel, Aviation Medical Examiner.

f. Medical facilities at Goodfellow Air Force Base include a 40-bed hospital, an outpatient department capable of handling 200 patient visits per day, and adequate laboratory and x-ray equipment. No new facilities are required for this study. Participation in the study will be limited to military personnel assigned to this base.

g. Items of non-standard equipment to be provided by the USAF School of Aviation Medicine include the following:

(1) Coccidioidin and histoplasmin skin testing antigens.

(2) Record forms.

h. The total estimated cost of the study at this base will be zero ($0).

i. The duration of the study will be one year. Approximately 2290 permanent party personnel will be included in the initial testing program. The first student group included in the study arrived on 21 February 1963 and included 81 individuals.

Bradley W. Prior
BRADLEY W. PRIOR
Lt Col, USAF (MC)
Base Surgeon
Goodfellow Air Force Base