17 January 1948

Subject: Recommendations regarding program, personnel and supplies for continued studies on Japanese B encephalitis vaccination among Japanese civilians in Okayama.

Memorandum for: Lt. Col. F. L. Bauer
                   Dr. Colin MacLeod
                   Dr. John R. Paul
                   Dr. W. McD. Hannon

1. At the meeting of the Commission on Virus and Rickettsial Diseases held on January 8, 1948 at Washington D. C. it was decided:

   a) that the vaccination program in Okayama, which was begun in June 1946 in association with Japanese civilians, be continued and extended as the most feasible, although not ideal, method of ultimately determining the protective value of the vaccine against the disease.

   b) that reliance cannot be placed on the Japanese doctors and scientists already associated with this project, and it is therefore necessary to have properly trained American personnel actively supervise the execution of the program and be responsible to the Army for the proper evaluation of the results.

2. The original program, with the exception of 2000 people over
60 years of age, included only children who in 1946 were 3, 4 or 5 years of age (American reckoning) because our Japanese associates believed that this age was the most susceptible, that the older ones were probably all immune and that even in the 3 to 5 year age group about 50 per cent would probably be immune prior to vaccination. Because surveys for neutralizing antibodies carried out in Okinawa in 1946 showed that our Japanese associates were not quite right in their estimates (see attached table), and because it is highly desirable to know the effect of a single series of vaccinations given in one season as contrasted with resistance induced by repeated booster doses over a period of several years, it is recommended that the program be extended as follows:

a) The original group of 19,000 children who will be 5, 6 and 7 years old in 1948 receive a single booster dose.

b) That an additional 10,000 to 20,000 children who in 1948 will be 3, 4, 8, 9 and 10 years of age (American reckoning) be selected in the same communities and receive their 3 doses of vaccine in the same manner as it will be given to American occupation personnel.

c) That each year, from among the new class of 3 year old children, approximately 3,000 to 6,000 (but not more than 50 per cent of the total in this age group) be selected for
primary vaccination, while all those vaccinated in previous years receive only the booster dose.

3. The American personnel must be prepared to obtain the following information:

a) In a group of at least 30 to 40 children determine the persistence of antibodies prior to the administration of the booster dose and also the effect of the booster.

b) A yearly spot check on the antibodies present in the children of the same age group in the unvaccinated control group.

c) Re-assay of the lots of vaccine used in this investigation after completion of the vaccination each year.

d) The incidence of CNS disease, confirmed serologically or postmortem as Japanese B encephalitis, in the areas under investigation.

4. While it will be necessary for the American personnel to work out of P. H. & W., SCAP and through the office of military government in Okinawa, it will also be necessary for them to have the cooperation of the virus division of the 405th Medical General Laboratory in Tokyo to carry out the serological tests on the controls, the vaccinated individuals and the suspected Japanese cases in Okinawa.

5. It is believed that this program is sufficiently important and time-consuming to be set up on a separate basis from Dr. Harmon's
epidemiologic team which is to be based on Okinawa. This does not preclude cooperation in cases of an epidemic on Okayama.

6. The man selected to head up the vaccination program will, in my opinion, have to be a year-round employee of the Army, either as a civilian or as a commissioned officer, because I do not know of any one else who would be in a position to go to Japan for several months each year over a period of years. Continuity is highly desirable - it would be highly inadvisable to have a different man take on the job each year. The director of the vaccination program should be responsible either to the Army Epidemiological Board or directly to the Office of the Surgeon General. The director of the vaccination program should be a man who possesses not only sufficient training in clinical medicine and epidemiology to be able to evaluate the suspected cases and the significance of any accumulated data, but also enough tact to deal with Japanese professors and public health officers and enough initiative and executive ability to overcome the many obstacles which arise in the course of the work. During the month of June, when the vaccinations will be performed, and during July, August, September and October when suspected cases of encephalitis will have to be examined and studied serologically, the director will need the services of a varying number of young medical officers of the
grade of lieutenant or captain who need not be permanent members of the "vaccination commission." The number of such officers will vary with:

a) the number of vaccinations to be performed.

b) the number of suspected cases of encephalitis which would be admitted to the central hospital in Okayama City.

It is suggested that the young medical officers be drawn from the pool in Japan as needed and that the SGO, through the chief surgeon, FSC, assign a high emergency priority to the needs of the director of the vaccination program.

7. In 1946 the Army, through the office of the military government in Okayama, had to supply at least 7 trucks or ambulances to enable the Japanese teams of doctors and nurses to vaccinate the 21,000 people scattered through 54 cities and villages. The seven American liaison doctors also acted as chauffeurs - otherwise it would also have been necessary to assign for temporary duty as many enlisted men to the project. Jeeps were also necessary for the American officers assigned for liaison in the central hospital in Okayama, and for reconnaissance duty in the outlying cities and villages to check on the occurrences and reporting of cases, and frequently also for bringing the cases to the hospital in Okayama City. I do not believe it
wise to set down here the precise number of vehicles which the "vaccination commission" will require, but I must strongly urge that the SG0 provide the authority and highest priority for the vehicles that may be needed.

8. A vaccination program involving 20,000 to 40,000 people scattered through about 50 rural communities in Japan is not a "shoe string" operation, and should not be initiated unless one is prepared to provide the supplies and the men to do it properly. Otherwise it would be better not to undertake it at all.

9. I have been through this operation one year and shall be glad to serve as consultant for the project. The man selected as director should come to my laboratory prepared to go over my voluminous files on this project and to discuss the various difficulties which were encountered in the past.

10. This project should not be initiated without the concurrence of the chief, P. H. & W., SCAP.

11. I cannot urge too strongly that Dr. Ross Gauld of the Army Medical School be prevailed upon to take the job of director of the "vaccination commission" and that his present and future duties, particularly during the absence of Dr. Snedel, be so adjusted that he could carry out this work.

Submitted by:

Albert B. Sabin, M. D.
Survey of Neutralizing Antibodies for Japanese B Encephalitis Among Unvaccinated Japanese Civilians in Okayama (Nov. 19 and Nov. 20, 1946)

(From paper by Bawell, Benelli, Matsuoto and Sabin)

<table>
<thead>
<tr>
<th>Region</th>
<th>Per Cent Positive in Indicated Age Groups (Years)</th>
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<tbody>
<tr>
<td></td>
<td>1 - 5</td>
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<tr>
<td><strong>Urban</strong> (Okayama City)</td>
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<tr>
<td></td>
<td>0</td>
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<td></td>
<td>(20)</td>
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<tr>
<td><strong>Rural</strong> (Vicinity of Okayama)</td>
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<td></td>
<td>0</td>
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The underlined figures represent per cent positive.
The figures in parenthesis represent the number of individuals tested in each age group.