

On the assumption (untestable at this point) that continued medical care for the Kontum area montagnards, supervised by Western personnel, is a worthwhile and practical endeavor in the context of the emerging political structure of the area; and that the rapid decline in resources available to the hospital will necessitate some basic changes in approach to the delivery of medical care, the following project is proposed.

The aims of the project are several. First among these is an attempt to characterize the medical situation of the Kontum Bahnar at this point in their history. Involved in this is the defining of the population served by the hospital in both demographic terms and in more subjective areas (history, social attitudes, perceived health needs, resources available, etc.). Next is an estimate (quantitative) of the morbidity of the population. A study of the reproductive history of women, coupled with questioning about the ultimate fate of pregnancies will not only be useful of itself, but also provide a basis for checking the validity of the demographic and morbidity data.

The second major objective of the project is a field test of data-collection techniques using locally trained montagnards as interviewers. Along with this, an evaluation of current hospital records may suggest techniques for efficient extraction of epidemiologic data.

An activity of this sort should help to introduce to the local health care staff the role of a preventive approach to the problems of the area, as well as to pinpoint needs for concentrated effort and identify areas for further study. It is hoped that the information gained from this effort may pro-

vide the basis for an increased interest in the health of the mountaineers, on the part of organizations with orientation toward specific target problems.

The study is proposed in two concurrent parts.

PART A -- (Objective demographic, morbidity, and reproductive assessment, over a one-year period.)

Phase 1. Initial mapping and census of two villages, selected on the basis of minimum apparent political sensitivity, willingness to cooperate with the study, and quality of the village personnel to gather the necessary information. The chosen villages will be ^{ones} fenced in, or otherwise geographically defined, and contain a population of 300-500 persons. No attempt will be made to match the villages with respect to economics, distance from the hospital, time in the Kontum area, or any other parameters. Census information will ideally include names and nicknames, date and place of birth, household relations, primary source of income, and length of time in village. Of course, cultural and political variables will define the level of accuracy of the information ^{obtained} ~~desired~~.

Phase 2. A year-long, weekly morbidity survey, conducted by one worker living in each village. Births, deaths, migrations, and pregnancies will be charted, along with any symptoms of the previous week. An attempt will be made to identify the perceived cause of the symptoms, as well as to record any treatment received and the ^{outcome} ~~issue~~ of the episode. Causes of death will be investigated in similar fashion.

Phase 3. A cross-sectional reproductive survey, conducted soon after the initial census, and repeated near the end of

the morbidity survey year. Information sought would be a history of all pregnancies or suspected pregnancies, and the outcome of each, traced to current living progeny or to the death of a fetus or child. Inquiry will be made into prenatal morbidity, perinatal morbidity of mother and child, and periods of infertility. Questioning should start from the most recent pregnancy. The population interviewed will be ever-married women, unless the need ^{and} ~~on~~ practicality of extending the survey to all venstrual women (with or without age restrictions) can be established. It is intended that the interviewing will be conducted by young montagnard women, preferably mothers themselves, or at least married, switching villages for the repeat survey.

Reliability *perhaps a good time for a quick, rough literacy test?*
Phase 4. Optional, a repeat of the basic census could be carried out. This is intended mainly for checking purposes.

Reliability. Certain potential internal checks of the reliability of the data are available. The repeat census, plus the yearly record of births, deaths, and migrations should be consistent with the initial census. The followup reproductive survey should be able to pick up the births and infant mortality of the past year, and serve as an independent check. Assuming no change in basic reproductive rates, the second reproductive survey should yield results similar to the first, although any differences will be hard to categorize as error rather than real. Certain episodes of morbidity will be reported in hospital records (Are the people who use the hospital also better informants?), as well as in the reproductive survey. Such episodes can be looked for in the morbidity survey data to get an idea of the reliability of the latter. Specific questionnaires,

necessarily worked out on the scene, are intended to ask certain questions from different aspects, expecting the same basic types of answers. Individual questionnaires need to be checked for completeness, looking for types of questions that are hard to get answers for.

Administration.

Personnel --

Phases 1,2, and 4 -- one male from each of two villages, to work in his village. Pay will be the current riastre equivalent of \$20 US/month.

Phase 3 -- two women, preferably midwives already working in the hospital, on loan for the reproductive surveys.

Supervisory and training -- one physician

Finances -- over a one-year period, approximately \$600 will be required, \$520 for salaries and the rest for transportation, printing costs, postage, etc. It is hoped that much of the latter expense can be obviated by donated services and scrounged materials.

Records -- (assuming approximately 800 people in the two villages combined)

Census - one sheet for each individual at the start of the survey, and every newborn after that. (800+) twice

Identification - one card for each household, with basic locating data on every person residing there. (200)

Reproductive survey -- one sheet for each eligible woman (200 twice)

Mortality survey -- one tally sheet for each person (assuming that the questionnaire can be refined to

one requiring only short answers, without losing its usefulness) (800+)

PART B -- (Subjective inquiry into village history, daily life, economic resources, and health attitudes) as well as opinions and observations of non-village persons, including Westerners, on the same topics.)

This part of the investigation will be primarily unstructured interviews with villagers, in the village, during the day. Initially, the talks will be as general as possible, aimed at defining the village setting. Later, as trust presumably builds, an attempt will be made to steer discussion toward health topics, specifically the villagers' perception of their major health needs, causes of common illnesses and alternative actions to be taken, theory and practice. Also of interest would be identifying those factors that determine hospital utilization. This interviewing will be conducted by the physician.

Further leads concerning health attitudes may be obtainable from outside the village. Local health workers, with a cultural background similar to those of the villagers, may be able to verbalize some of the attitudes affecting acceptance of health efforts. Similarly, Westerners, with significant experience in the area can perhaps suggest areas ~~xxxxxxxxxx~~ in need of deeper exploration. These thoughts may be useful in guiding the village-based part of the attitude study.

In addition to the myriad problems normally attendant to a study of this sort, the Kontum area offers several unique

difficulties. Because of the rapidly changing political situation, distrust is almost sure to be at a high level, and villagers will be understandably suspicious of an unexpected attempt (of American origin) to gather any type of information. Furthermore, the people have been accustomed to certain attitudes associated with the hospital personnel, and may give biased answers in order to please. The physician/supervisor necessarily will be known to the villagers in a quite different role, and it may be misunderstood that the needs of the population can be served not only by direct clinical services, but also by efforts of this sort. I will be able to spend no more than two months in the Kontum area. During this period, Phase 1 should be completed, the staff and mechanics of Phase 2 developed and operational, the initial reproductive survey completed, and much of the Part B information compiled. It is hoped that continuing supervision of the morbidity survey can be accomplished by another interested physician remaining in the Kontum area. (Similarly, the follow-up reproductive survey) If the basic machinery of data collection can be properly devised, this might involve one meeting each week with the village staff, discussing the material obtained.

Key to the success of the study seem to be the reliability and ease of administration of the questionnaire, as well as the training of the staff. Toward this end, a trial survey in a third village may improve the execution of the study.

If the study can be completed as planned, it is hoped that the following information will be available: (This information will apply only to the two villages studied, and only for the year of the investigation. Although this project is not ran-

domly sampling the population served by the hospital, it is assumed that this group is sufficiently homogeneous that the true population structure and dynamics can be approximated, and that morbidity trends can be grossly identified.)

Part A -- answers to these questions would hopefully be forthcoming.

What is the birth rate?

What is the death rate?

How much migration occurs at this time?

What is the basic family unit?

What percentages of the population have reached given ages (population pyramid)?

At what age does most mortality occur?

What are the leading causes of morbidity, mortality?

At what ages, at what times of year does each peak?

What degree of fetal wastage does the village population experience?

What is the risk to the mother of delivering a child? Why?

How would this study design be best modified to get a more accurate picture of the health situation of the Montum area mountaineers?

Etc.

Part B (In general terms:)

What are the economic resources of the village?

How is a day spent?

What are the perceived health needs, and how are they met?

What are the medical resources available?

What folk beliefs are associated with certain common illnesses?

What deficiencies are seen in health care as presently provided by the hospital?

How much can the village be counted on to help support the hospital?

Why is it so hard to recruit blood donors?

What is the impression of the value of injections versus oral medication?

What were the medical resources used before western influence?

What could be target areas for health teaching? Best approach?

Answers to the above questions would give an approximation of the current health situation of the Kontum-area mountagnards, and suggest areas for further study. Collecting the data would offer a useful test of practical survey technique, and should make more efficient any future attempt to investigate the larger population of people served by the hospital. This latter study is needed to provide an accurate baseline for long-term preventive efforts, but seems impractical at present in view of the commitment required of finances and personnel, as well as the political uncertainty of the area.

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