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REPORT ON CAMBODIAN HEALTH CARE SYSTEM
(The Khmer Republic)

This Report is based on a study
by

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Dr. French visited The Khmer Republic
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**REPORT ON CAMBODIAN HEALTH CARE SYSTEM
(KHMER REPUBLIC)**

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INTRODUCTION

I. INTRODUCTION

During ten days in October (1 October through 10 October) I visited the Khmer Republic where I was joined by Dr. John Kennedy from Vientiane, Laos. Mr. Wilson Adams and Mr. Joseph Jacobs from the local AID staff also accompanied us in many of our activities. This visit was made as a follow up to a brief visit made by Mr. Wells Klein and myself in June 1974. USAID concluded as the result of the earlier visit that there were many unknowns in the health care system of Cambodia and in view of the severe problems created or exacerbated by warfare that further assessment was in order.

Our team focused on visiting health facilities of the major seven (7) outlying pockets of population and of the voluntary agencies in Phnom Penh and discussing the health care situation with the officials of the Ministry of Health, the U.N. agencies and the voluntary agencies.

Immediately prior to my departure to the Khmer Republic, Dr. Isiah Jackson and I visited the U.N. agencies primarily involved (UNDP and UNICEF) to gain a central view of their approach to the problems of health care in the Khmer Republic. Initially I had hoped to visit the Southwest Pacific headquarters of WHO in Manila, but scheduling would not allow it. Plans to stop there on the way back to the U.S. were later cancelled because it was felt that the peculiar nature of relationships of WHO in the Khmer Republic deserved full attention at a higher level.

It is hoped that information gained and conclusions drawn will be of assistance in the program planning of USAID. New ways of involvement with

the Ministry of Health and voluntary agencies, new approaches through multi-lateral channels, and consolidation of civilian and military health efforts are suggested herein in represent new and interesting challenges.

Finally, it is my sincere hope that the Khmer people will be helped as a result of this visit and the changes that may ensue. Certainly there are no people more deserving.

POPULATION, HOSPITAL BEDS AND HEALTH PERSONNEL STATISTICS - Battambang

Population

Province 574,941
 Capital 1-200,000 (very rough estimate)

Hospital Beds

Official (Khmer) 240
 Temporary -
 TOTAL operative 213
 occupied 170 (occupancy 79.8%)

Beds/1,000 people

current .370
 future .417

Numbers of Health Professionals

Government Figures (Lao sets - includes military)

MDs	14	12
Pharmacists	1	1
DDS	2	3
Midwives	23	
Nurses	118	
Other	0	1 (malaria control)

Health Professionals Ratios

MD	.024/1000	or	1/41,667
Pharmacist	.002/1000	or	1/500,000
DDS	.003/1000	or	1/333,333
Midwife	.040/1000	or	1/25,000
Nurse	.205/1000	or	1/4,878

BATTAMBANG (3 October 1974)

This provincial capital was our first site visit outside Phnom Penh; in many ways this was unfortunate. Battambang was completely unlike any other city we saw. Not only was this center of commerce wealthier and seemingly less distressed than any of the other cities. It was also the one place wherein the facts were not freely obtainable and we left feeling sure we had seen little of importance relative to the sense of our mission. No other city has as many professionals; undoubtedly this is related to the available wealth.

The 240-bed provincial hospital was visited. Dr. Srang, the medical director was obviously proud of this facility and claimed that it was probably the best in the country. Only 170 patients (capacity 240) were on the inpatient census the day of our visit and apparently this is not uncommon. It was the only hospital visited where the census was under 100%. Although it was only 11:00 AM, there were only 8-10 outpatients in the unit, with virtually the same number of employees. We were told that there are approximately 300 outpatient visits per day between 7 and 10:30 AM. The accuracy of this figure was not verified. At the same time one could feel sure that if patients wish to be treated they most assuredly must come early in order to be seen by a nurse or physician, since these health personnel seem to depart by mid-morning.

We were concerned about the availability of medical care to the influx of refugees because of recent warfare in the area. It did not seem that the health care activities described by the medical director were in line with the official figures for the increase in refugees from 29,000 in July 1974 to 44,000 in October 1974. Dr. Srang felt that most refugees had migrated

to the city of Battambang where they had been absorbed into the homes of friends and relatives and that the work force had likewise absorbed the majority. For this reason, only two outlying areas had been set up for refugee settlement, since almost all would find the provincial capital much more preferable. We visited one of these facilities, Otoki, which was approximately 15 km from Battambang. It contained 100 thatch huts built on stilts over a flooded rice paddy. Only 39 huts proved to be occupied. A few women, children, and elderly were seen; the rest were reported to be away at work. Several children were shown to us, the immunization marks for smallpox and BCG demonstrated and we were assured they had also had polio and DPT. We were told that the other refugee camp, built by Catholic Relief Services (CRS), was about 40 km away, toward the Thai border, in an area noted for malaria. We were told the road to this place was extremely difficult and that almost no one was there.

We were aware of CRS's desire to establish a medical outpost in Battambang which would serve the entire area from Pursat to Siem Reap around the end of the Tonle Sap. Questions directed to Dr. Srang about this proposed project revealed a concern for "outside interference." Although he had found ways to prevent CRS health activity up to the time of our visit, we proceeded to direct the discussion toward use of a CRS team to cover the outlying 10-12 villages. We presumed that an untold number of refugees must be dispersed through them since the city of Battambang was obviously not overcrowded and as the camps we had seen in no way reflected any significant part of 44,000 refugees (15,000 more than in July). Dr. Srang, admitted that his mobile team only sporadically circulated through these villages and that he

could put the CRS team to good use in such a project. Furthermore, Dr. Srang would assign one of his doctors per day to such a team. He noted however that transportation (gasoline) and supplies would also have to be provided.

The provincial hospital campus contained several buildings, one of which was virtually new. The new building and much of the supplies and equipment had been bought with private contributions from the community through fund-raising, primarily amongst merchants. The buildings were spotless and the surgery and delivery suites well-kept and equipped, as was the radiology area. All specialty areas seen (such as ORs, delivery suite, radiology and pathology) were totally devoid of any sign of patient care activity even though it was not yet noon. Staff for these areas were all in evidence. We did not observe the wards and questions regarding the comparison between private and non-paying patient care were evaded. We did ascertain that only 1 in 7 of the beds (21 the day of our visit) was occupied by the military, since a good military hospital was nearby. Again we found this in sharp contrast to the situation in Phnom Penh, and the hospitals of other cities visited, where 65-75% of the patients were military.

When questioned about supply, equipment and maintenance support from the national government, we were informed they could requisition twice yearly. Only about 1/5 of these orders were customarily filled, however, and quite a point was made of the fact that most of the support came from private sources. One could easily imagine Dr. Srang to have been describing a privately owned and operated facility wherein private physicians managed good practices primarily for the well-to-do. Many refugees and other poor persons were said to

attend private clinics (often run by practicing nurses) where they paid for their services. Dr. Srang felt that since almost everyone was employed there was little if any medical hardship caused by such a fee-for-service ambulatory care system.

Having been made aware of an alleged refugee population of 44,000 we were hard put to explain where these refugees were. For a city of perhaps 150,000 people to have absorbed an additional population up to 1/4 its size, there should have been obvious evidence of crowding, sickness, and disorganization. We were not able to elicit an adequate explanation for this apparent incongruity. A sense of independence and provincialism was constantly portrayed by Dr. Srang and this was accompanied by what seemed to be a conservative and secretive approach. Rather than complaints of lack of governmental support there seemed to be an attitude of pride in being separate and "self reliant," even though a high Ministry of Health official was present. Refugees were of little concern to the health personnel and, if there were health and social welfare needs amongst them, they were carefully side-stepped. We were given no chance to see for ourselves what might have been the case, good or bad.

SUMMARY

1. Health needs of the province were not completely divulged.
2. The problems of refugees were essentially side-stepped and remain undisclosed.
3. Hospital and health personnel offered to be likely greatly under-utilized.

RECOMMENDATION

Ministry of Health and Ministry of Refugees intervention to ascertain the true state of affairs relative to refugee population and status of health affairs in the province. A plan for equitable health coverage should be based on these determinations under the auspices of the Ministry of Health and using volags (CRS, if possible) as indicated and available.

POPULATION, HOSPITAL BED AND HEALTH PERSONNEL STATISTICS - Kompong Speu.

Population Province	447,000-500,000
Capitol	--
Hospital Beds	
Official (Khmer)	17
Temporary	28
Other (volags, etc.)	
operative	10
planned	42
TOTAL operative	38
future	80
Hospital Beds/1,000 people	
current	.076
future	.160
Numbers of Health Professionals	
a) Government figures	
MDs	1
Pharmacists	0
DDS	1
Midwives	6
Nurses	41
b) Other (CRS staff)	
MD	2 (1 OBI, 1 Khmer)
Nurses	4 (2 OBI, 2 Khmer)
Auxiliary Nurses	3 (Khmer)
Community Health Workers	4 (Brothers of Charity)

Professional Ratios

MD	.036/1000	or	1/166,667
DDS	.002/1000	or	1/500,000
Midwife	.012/1000	or	1/83,333
Pharmacists	0		
Nurses	.096/1000	or	1/10,417

KOMPOENG SPEU (5 October 1974)

Our delegation was met personally by the Province Governor, General Shantaralnesey Sisawath, a member of the former royal family. The Governor's popular support was everywhere in evidence and he seemed most anxious to make any and everything available to us for assessment. In general, the province seemed to be poor and the vicissitudes of warfare were evident in the destruction, crowding, malnourishment, and the general appearance of the population. Many ramshackle huts were crowded along the roads and streets, indicating a swelling of the population by the absorption of refugees.

CRS is in the process of building a hospital compound of 3 wooden buildings to replace the provincial hospital of 28 beds which is temporarily housed in an inadequate hotel building in the center of town. The former provincial hospital was destroyed in 1971. The long, single-story, barrack-type, wooden structures (3m X 2m) now under construction will ultimately accommodate 52 patients (26 in each of 2 buildings) and provide dormitory accommodations for the staff, consisting at present of 1 M.D. and 4 Khmer nurses. Across the street from the new hospital construction a public building was about to be renovated and converted to an ambulatory care facility and an operating suite. Completion of the new facilities was running considerably behind schedule and, in order to move ahead, 1/2 of one building was about to be opened for inpatient care (10 beds), the remainder of the building being used for supplies. A good 100 bed military hospital is located adjacent to the new hospital construction.

Local estimates of the population of this province ranged as high as 500,000, with 100,000 identified as refugees. Seven (7) refugee camps have been established in the environs of the provincial capitol and there was ample evidence throughout

the town of many refugees housed temporarily as squatters, under very poor conditions. CRS staff is attempting to deliver care via mobile teams to the refugee camps (29,000 people). CRS also has the assistance of the Brothers of Charity and is involved in food supplementation for refugee children and the identification and correction of malnutrition. World Vision and CARE also were engaged in nutrition and housing activities. The latter giving food assistance to some 2100 families.

The program outlined for K. Speu by Dr. Gay Alexander, CRS Medical Director, in the October 2, 1974 memo titled, "The Future of the Medical Program in Cambodia" was listed as six-fold.

1. Opening of a dispensary/infirmary primarily for malnourished children, initially
2. General medical clinics in the villages
3. Nutrition program

Soap kitchen - nutrition aides - dry milk distribution -

Brothers of Charity

4. Training of local personnel
5. Public health teaching
6. TB campaign

Two organized refugee camps and a spontaneous refugee settlement in town were visited. The first camp contained some 2,500 and much of the camp seemed to have been constructed relatively recently. The thatch dwellings with corrugated plastic roofs were neatly arranged and in good condition. Well kept, orderly gardens abounded throughout and some cattle were also being raised. Two nicely constructed wells were in constant use and two additional wells were not yet equipped for use. Many children were

seen and their nutritional and general health status was related to the length of their presence in the camp--the longer there, the better they looked. A number of infants and small children evidenced poor development and obvious malnutrition and mothers often seemed to be poorly nourished, themselves. One could not help but speculate that little if any nourishment came from their breasts. Eye infections abounded, many appearing to be bacterial conjunctivitis, but some probably due to trachoma. Dr. Tekto made notes and indicated plans to make an ophthalmologist available. No health facility, as such, existed but Dr. Garcia, the Filipino physician from Operation Brotherhood who heads the CRS operation in K. Speu, indicated that a regular sick call conducted by the Brothers of Charity served to identify health and nutrition problems for the mobile team to see on their visits.

The second camp (Wat Ong) contained 2,527 people, 1,045 being children under 12. This camp had obviously been established longer and inhabitants likewise had been there some time. The camp was well organized as a village, with a chief and village elders in authority. Many had escaped from Khmer Rouge control resulting from the takeover of a former village they had lived in. CRS had organized a midday "soup kitchen" involving mothers, to feed all children in the camp. We saw this efficient, well organized operation in action; a protein-fortified rice soup was served. The village chief stated that there was general food shortage as well as shortage of clothing and blankets for the rapidly approaching cool season.

Later we had the opportunity to speak with Dr. Gay Alexander, the Medical Director for CRS. Dr. Alexander felt that the medical services had a number of deficiencies which might be attributed to the short-term contracts of the Operation Brotherhood physicians and general problems of communication.

A further look at the leadership pattern would be interesting at both the central and local levels of CRS.

Finally a brief visit to one of the many urban clusters of refugees gave us a contrasting picture to that seen in the two camps visited. Several hundred refugees were squatting around a rice mill operated by a Chinese merchant for whom they furnished a ready source of cheap labor. Living quarters were temporary structures made of salvaged wood and metal put together along the roads and streets. General hygiene here was extremely poor and nutritional status seemed generally worse. One old man, for example, living in a converted pig sty, was seen as he was just beginning to move about again after being partially paralyzed from beri beri.

SUMMARY

1. Of 100,000 refugees (1/5 of the provincial population) we saw 5,000 living in two of seven camps and numerous others existing in a non-organized state along the streets.
2. General health and hygiene, nutritional and housing conditions were marginal for many refugees.
3. Many specific disease problems exist as outgrowths of living conditions and the generally poor nutritional state of the population. This is especially noteworthy in infants, young children and the elderly, traditionally the most susceptible populations.
4. There was no evidence of local medical care activity other than that provided by CRS.
5. Water supply for hospital and camps was incompletely developed, though in progress.
6. A new hospital complex being constructed under auspices of CRS was seen. Problems: (1) construction, staffing and program implementation were considerably behind schedule; (2) water and power support were even less well developed to support the new hospital complex; and (3) CRS organizational overseership locally and as it relates to central management reveal administrative problems of significance.

RECOMMENDATIONS

1. Study of additional refugee support needs to be followed by creation of more organized housing and water supply.
2. Arrangements for effective leadership for CRS medical operations in K. Speu.

3. Development of dispensaries and mobile health coverage for refugee facilities, and special emphasis on eye diseases and others as identified.
4. Speed up of the new hospital construction and development, including water and electrical support.
5. Increased involvement of the Ministry of Health in planning, development, manning and monitoring of K. Speu health care programs including CRS component. Need capability of monitoring population on an ongoing basis as to health needs both in and out of refugee camps.
6. Ministry of Health to plan for development of hospital beds sufficient for total population. Current beds (civil plus military) 152 - total beds needed probably closer to 500 as a long term goal. This should not supplant adequate ambulatory (primary) care as a priority, however.

POPULATION, HOSPITAL BED AND HEALTH PERSONNEL STATISTICS - Kompong Chhnang

Population 322,368 (province)

Hospital Beds

Official (Khmer)	178
Other operational	252
planned	-
TOTAL operative	252
future	-

Beds/1,000 people

current	.783
future	-

Numbers of Health Professionals

Government figures

MDS	4
Pharmacists	0
DDS	1
Midwives	6
Nurses	55

Other health staff

IOG - 1 MD (surgeon)
 2 nurses (1 nurse anesthetist, 1 OR nurse)
 1 administrator

Health Professional Ratios

MD	.016/1000	or	1/62,500
DDS	.003/1000	or	1/333,333
Midwife	.019/1000	or	1/52,632
Nurse	.177/1000	or	1/5,650
Pharmacist	0		

KOMPONG CHHNANG (7 October 1974)

Kompong Chhnang has been a major battle area for several months now, throwing a considerable stress on the provincial hospital. We were met by Dr. Sreng who is the Medecin Chef as well as the Director of the Provincial Hospital and who certainly impressed us as being energetic and quite devoted to his job. Dr. Sreng was well prepared with various data sheets and papers containing statistics relative to their activities.

We visited the surgical section of the hospital, which included operating suites as well as ward areas and, as was the case in June 1974, there is still present an IOG team from Sweden consisting of a surgeon, an operating room nurse, a nurse anesthetist and an administrator. There seemed to be considerably increased supplies available to this team as compared to June and one could not help but be impressed by the excellent, sophisticated surgical procedures and care that were going on here. They had just done 125 major operations in the past three weeks; at least 50% of these involved some kind of orthopedic procedure and almost all of the surgical procedures were related to warfare.

Dr. Sreng went into some detail reviewing the health care needs of K. Chhnang. He transmitted to me a personnel breakdown and organizational chart of his hospital which is divided into eight divisions, covered by a staff of 78 people. A summary of this breakdown is included, since it represented the best example of a well-organized provincial hospital that we had the opportunity to see, as well as to study its administrative breakdown. After reviewing the structure and function of this provincial hospital, Dr. Sreng then presented us with a listing of needs which he felt were essential to proper development of

the institution to meet civilian as well as military needs and, again, it seemed to be well thought out (the listing is included for the record). Dr. Sreng is also the president of the provincial committee of the Red Cross in K. Chhnang. In that capacity he gave us a report on refugees for the province which documents not only the seven camps near the village of K. Chhnang but also three other areas totalling eight additional refugee sites. In all, there were 21,067 families or 97,498 persons who had been registered as refugees as of 21 September 1974. During the time of our visit we had an opportunity to see a refugee camp housing the Long Vec refugees which I had been seen in June 1974.

The refugee camp had been set up on the grounds of the Ecole Modele and, when originally seen in June, refugees were living in very poor conditions, in and around the buildings of the school. In October the refugees were living in an orderly fashion on the grounds of the school but in housing which had been supplied by World Vision. Even though their numbers were increased their housing conditions were considerably better, they being able to take care of themselves quite well and, in fact, they had even begun to grow gardens and produce some of their own food stuffs.

We were quite concerned about the medical status of the refugees in this camp which could be considered an indicator of what was going on in the other 14 or 15 camps in this province. Unfortunately, no medical care activities had been designed and, on rare occasions a physician would come to this particular camp.

World Vision, however, was interested in establishing a mobile team which would have the capability of making regular visits to refugee camps. This is badly needed. If established, the mobile teams could relate quite well to the provincial hospital and the potential for good medical coverage here seems to be excellent.

In support of the list of medical needs documented above, I should like to indicate that Dr. Grellity, new Medical Director for the IOG team, had joined Dr. Sreng in putting considerable effort into the development of the medical capability of the provincial hospital. Dr. Grellity had begun work on a referral system between the refugee camps and the hospital and was interested in having an impact on the nutritional problems, anemias, parasitic and gastroenteric diseases. This planning and development of operational capabilities seemed to be going along nicely. In addition there was a concern expressed about the overload of the surgical team in the provincial hospital. As indicated previously, a Swedish surgical team has been located in this institution for some time and has been extremely busy, primarily with war casualties and this, in turn, has compromised its ability to meet the surgical care needs of the province. For this reason, one of the proposals of Dr. Sreng was to increase the surgical capability of the hospital with an additional physician and supplies (and equipment). Dr. Grellity was of the opinion that a blood bank should also be established at this provincial hospital and a discussion ensued about the relative merits of such a blood bank. Undoubtedly, this matter should be carefully studied since the potential benefits of adequate blood supplies for surgery could easily be outweighed by the organizational and technical capability of the staff and equipment that would have to be made available for the purposes of maintaining a blood bank. Not only are such things as refrigeration and technical staffing necessary, but in addition the matter of stable power and water supply at all times could play a great part in this decision-making process. Lastly, in the matter of the blood bank, the question of priorities should be well thought out since there are many severe medical care needs relative to refugees and the general population which might deserve prior consideration.

SUMMARY

1. The provincial hospital in K.Chlmang city was visited. The Medecin Chef and the IOG Medical Director, along with other key individuals, made an excellent presentation as to the capability and needs of the hospital relative to the population of the province. Also, certain requests were made and some justification presented for them.

RECOMMENDATIONS

1. Expand the capability for surgical care in the provincial hospital which is under IOG auspices, through the activities of a Swedish team. This should be worked out with the Ministry of Health with strong consideration for how to work in and adequately finance additional Khmer physicians and staff to expand this capability forming a long-term base remaining after IOG departure.
2. The development of a mobile team and dispensaries to cover the provincial refugee sites with a capacity to serve the medical care needs, to deliver certain basic medical care and to triage patients as necessary to the medical facilities in the provincial capital ostensibly to be done by IOG - Expedite.
3. To strengthen the relationship between the Ministry of Health and the provincial office such that supplies and equipment can be expedited. Also, close cooperation with the Health Ministry could well lead to the enlargement of staff and certain key personnel to carry out the expansion of surgical capability as well as mobile medical capacity.
4. Give strong consideration to development of a method of supply and

REPORT ON THE CAMBODIAN HEALTH CARE SYSTEM
SITE VISITS-K. Chhuang

maintenance for hospital, refugee camp dispensaries and mobile team which is staffed as well through an integrated mechanism mediated through the Ministry of Health, even though funding may be multi-lateral (IOG, USAID, MOH).

**DRAFT-REPORT ON CAMBODIAN HEALTH CARE SYSTEM
Site Visits - K. Chhnang**

**KOMPONG CHHNANG PROVINCIAL HOSPITAL - ORGANIZATION (as reported by Dr. Sreng,
A Medecin Chef for K. Chhnang)**

- A. Administration Office
- B. Outpatient Services ("Consultation Suite")
 - 1. Dispensing Pharmacy
 - 2. Injection ("Shots") Room
 - 3. Treatment (Trauma & Wound Dressing) Room and Minor Surgery
 - 4. OB-GYN (pre and post natal care, etc.)
- C. Dental Services
- D. Central Pharmacy and Laboratory for Microbiology and Parasitology
- E. Hospital Services
 - 1. Salle Chirurgie Payant & Salle des Moines (Surgical Ward for Paying Patients and for Monks) - 75 beds
 - 2. Salle de Medecine Payant (Homme) (Medical Ward for Paying Patients - Male) - 39 beds
 - 3. Salle de Pediatrie & de Medecine Payant (Femme) (Pediatrics & Medical Ward for Paying Patients - Female) - 27 beds
 - 4. Salle Pracheareas (?) - 31 beds
 - 5. Salle Indigent & Isolement (Ward for Poor and Isolation Ward) - 64 beds
 - 6. Salle de Maternite (Maternity Ward) - 16 beds
- F. Operating Suite
- G. Housekeeping, Laundry, Plant Support
- H. Transportation (ambulance services)

(cont inued)

DRAFT-REPORT ON CAMBODIAN HEALTH CARE SYSTEM
Site Visits - K. Chhvang

KOMPONG CHHANG PROVINCIAL HOSPITAL - ORGANIZATION (continued)

Hospital Beds:

159 beds
93 cots (folding beds)

TOTAL **252 civilian beds**
36 military beds

* October 1974

(b.) LIST OF NEEDS FOR THE PROVINCIAL HOSPITAL IN KOMPONG CHHNANG**(submitted by Dr. Steng, Medecin Chef)****A. Personnel**

surgical team with physician (surgeon)

2 general practice physicians

nurses (male and female)

laboratory technician

orderly/aide

B. Medications and Treatment Supplies

antidiarrhetics

antimalarials

antihemorrhagic agents

tetanus toxoid

antibiotics

glucose and saline solutions

all treatment supplies - bandages, dressings

incubator and gasoline (fuel)

syringes and needles

blood pressure equipment

suction equipment for OB

autoclave

refrigerator

oxygen cylinder for medical ward

(continued)

C. Linen

drapes

mosquito netting

sheets, blankets and pillows

D. Repair of the Maternity Building

II. D. SITE VISITS - K. Thom

POPULATION, HOSPITAL BED AND HEALTH PERSONNEL STATISTICS - Kompong Thom

Population Province	341,128
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Capitol	-
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Hospital Beds

Official	103
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Other	-
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TOTAL	Operational	103
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Future	-
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Beds/1,000 people

current	.302
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future	-
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Numbers of Health Professionals

Government figures (2 listings)

MDs	3	4 (3 military)
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Pharmacists	0	
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DDS	1	1
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Midwives	6	
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Nurses	35	
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Other	0	
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Health Professional Ratios

MD	.009/1000	or	1/111,111
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Pharmacist	0		
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DDS	.003/1000	or	1/333,333
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Midwife	.018/1000	or	1/55,556
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Nurse	.103/1000	or	1/9,709
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KOMPONG THOM (7 October 1974)

Kompong Thom has had a significant history in the past of being nearby major warfare. In fact, the main hospital building has undergone shelling in 1970 and 1971; the roof and part of a wall were damaged and remain at the present time unrepaired. As a result of this warfare, the Indochina Operations Group (IOG) had established a surgical team in this provincial hospital and a significant amount of supplies and equipment accompanied the team. In February of 1974 this team left and left behind all its equipment, including two well-outfitted operating suites, including sterilizers and preparation areas. In addition, two x-ray machines were left behind and two generators. During the presence of the IOG team an Officer de Sante was trained as a surgical technician and, since the departure of the surgical team, he has continued to perform surgery on his own, there not being any physician who has related to the hospital in this regard. A basic operating dental suite unit was left behind and this had been operated by a dentist until several years ago. The dental equipment was badly damaged during warfare and, although he is still assigned, he is unable to work because the dental equipment has not been repaired.

We were accompanied by Dr. Tekto and in our discussions relative to the availability and maintenance of equipment, it was brought out that MESH units had been made available for the supply of component equipment items or for the complete outfitting of the hospital. Unfortunately, even though the equipment is available, transportation is often not available nor the kind of administrative involvement that would be necessary to locate needs for equipment and link them through adequate transportation with sources of available equipment. There were other evidences of inadequate maintenance of equipment and although there

were three anesthesia machines present, only one was completely operative because of the need for replacement of parts. Two large operating lights which had been manufactured in Japan were only partially operative because some of the lighting elements had burned out and replacement had not been possible through ordinary government (Khmer) sources. The same was true of a Japanese-manufactured sterilizer unit, the heating element of which needed replacement, but this had not been made available through the government mechanism. We were also made aware of deficiencies of bandages, plasma, x-ray film, chemicals for the processing of x-ray film, and anesthesia supplies including gases.

A malaria control office was located in one of the buildings on the hospital grounds and at the time of our visit two technicians were present, one of whom was in charge of the operation. He indicated their schedule of intermittent spraying of DDT as well as the collection of blood smears as being their primary activities. The laboratory seemed to be basically equipped including a good microscope but on close inspection it did not seem that the laboratory was undergoing much actual utilization. During the discussion with the technicians one got the feeling that there was almost total lack of supervision of their activities or involvement in any kind of plan which was administered and evaluated from the central government in Phnom Penh or the Provincial Government.

A permanent building was under construction on the hospital grounds, under the auspices of UNICEF to be the permanent site of a school health program. And in addition CRS was in the process of completing another building to be used as a nutrition rehabilitation center, the inpatient component. We were reminded that CRS had been involved for some time in supplementary feeding programs for infants and small children and I recall having visited one in June 1974. It was indicated that this facility would serve not only as the inpatient site but also as headquarters for the supplementary feeding program in the

province. It was indicated that 103 beds were normally present in the hospital, but that this hospital was frequently overutilized. Two-thirds of the hospital beds were occupied by military patients.

We visited the village refugee center where we looked at the latest statistics indicating that 7,921 families, including 35,193 people, were currently registered as refugees. This population was consuming a little over 700,000 kg of salt per month as well as 10,545 tons of rice. Taking into account the Ministry of Health's nutritional standard of 275 gm of rice per capita per day, representing 50% of the caloric intake, it would seem that this amount of rice was just approximately meeting the standard that had been set. It was interesting to note, however, that the salt consumption was approximately 10 times normal. Close questioning resulted in information indicating that most of the salt is not consumed in food but is used in preserving fish which may or may not be consumed by those processing the fish.

No refugee camps were visited on this occasion, but in recalling visits to refugee camps made in June 1974 it again became noteworthy that there was no direct connection either to deliver medical services or to identify medical care needs and see that they are met, in the refugee camps. Existence seems to be quite marginal in this area. The production of rice and other food-stuffs is inadequate to meet the needs of the population which has become unevenly distributed, at least in the provincial capital.

SUMMARY

1. A provincial hospital is in existence which must serve not only the general population but the military personnel as well, resulting in 2/3 of the patient beds being occupied by the military.
2. Both the number of beds in the hospital and its current manage-

ment and professional staffing are inadequate and need to be shored up.

3. Malaria Control Office appears to be substandard and to have potential which is not being fully utilized.
4. Equipment and facilities lie fallow because of lack of adequate maintenance and supplies.
5. A budding school health program seems to be about to develop as well as a new nutrition center, the former under the supervision of UNICEF and the latter under the supervision of CRS.

RECOMMENDATIONS

1. The Ministry of Health should inventory the physical plant, the equipment and supplies of this provincial hospital with an eye to identifying replacements and provision for same to bring the hospital up to its full potential.
2. Some type of full-time physician coverage should be made available, either through direct action on the part of the Ministry of Health or through combined resources between the MOH and the military.
3. Refugee camps should be more closely monitored for health care problems, perhaps this being best done by the establishment of small dispensary units at each one, all of these being covered in turn by a mobile health team with the capability of identifying problems and either correcting them on the spot or triaging the involved individual.
4. Perhaps a special "Health Problems" section should be set up in the hospital to bring together the malaria control problem, the newly developing nutrition program and TB identification and treatment

REPORT ON CAMBODIAN HEALTH CARE SYSTEM
SITE VISITS-K. Thom

program, as well as any others which might be indicated in the areas where special disease processes lend themselves to specific, narrowly regulated and administered programs.

5. A capability for the maintenance of equipment and the distribution of adequate supplies should be undertaken. This should be operative not only for the hospital at K. Thom but for all of the provincial and other significant hospitals throughout the country. At this time this should add up to probably less than 10 such facilities.

REPORT ON CAMBODIAN HEALTH CARE SYSTEM

II. E. SITE VISITS - K. Som

POPULATION, HOSPITAL BED AND HEALTH PERSONNEL STATISTICS - Kompong Som*

Population	348,088
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Hospital Beds

Official	60
----------	----

Temporary	70
-----------	----

Other

Planned	70
---------	----

TOTAL operative	70
-----------------	----

future	140
--------	-----

Hospital Beds/1,000

Current	.20
---------	-----

Future	.40
--------	-----

Numbers of Health Professionals

Government Figures

MDs	2
-----	---

Pharmacists	0
-------------	---

DDS	2
-----	---

Midwives	9
----------	---

Nurses	30
--------	----

Other	0
-------	---

Health Professionals Ratios

MD	.006/1000	or	1/166,667
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Pharmacist	0
------------	---

DDS	.006/1000	or	1/166,667
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Midwife	.026/1000	or	1/38,462
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Nurse	.086/1000	or	1/11,628
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*It should be noted that K. Som is not a province; its area consists of the town of K. Som and its immediate environs.

KOMPONG SOM (8 October 1974)

We visited the provincial hospital in K. Som being hosted by the Medecin Chef, Dr. Seng, and two of his staff physicians. This hospital has had the special interest of Mr. John Gunther Dean, U.S. Ambassador, and as a result has recently had completed a second floor. The original condition of the hospital was described as being very poor and this, too, was corrected. The total cost was quoted as 2.6 million riels and increased the bed capacity from 40 to 70 beds. Additional construction funded by the town is now also underway. The staff was also increased from 2 to 4 physicians, including Dr. Seng, who is chief and surgeon of the hospital. From his briefing, the primary remaining problems are:

- (1) insufficient water supply - The water pressure from the town water supply is inadequate to maintain continuous flow to the hospital which stands atop a hill. By constructing a water tower it was felt that sufficient water could be made available at all hours of the day.
- (2) adequate electrical supply - Maintenance of a generator of sufficient output is only partially solved and additional construction and installation is needed. The generators from the MESH unit are only questionably capable of maintaining the hospital, especially if a major pumping unit were added for the purposes of filling their water tower.
- (3) kitchen - Facilities were described as inadequate for patients and staff.
- (4) laundry - Current laundry facilities were also described as inadequate.
- (5) an outpatient area - Currently there is no ambulatory care facility

associated with the hospital or anywhere within the town. World Vision has constructed a large refugee housing facility on the outside of town which likewise has no medical care coverage.

- (6) a laboratory and blood bank - Only very basic laboratory procedures can be done with the existing equipment and, due to the separation from Phnom Penh, use of facilities there is impractical. Basic hematology urine and blood chemistry procedures as well as bacteriologic studies would seem to be reasonable. However, the creation of a blood bank creates some problems. Not only is the equipment costly and critical in its maintenance needs, but also staff sophistication is necessary. Dr. Seng indicated that at present they have almost no capacity to give any kind of fluids or electrolytes I.V., mainly due to lack of the I.V. solutions. It was indicated that a first step might be to undertake the production of these items before undertaking blood banking.
- (7) construction of a new wing with addition of 70 beds - Dr. Seng felt that the hospital should be increased to a total of 140 beds: 50 medical, 50 surgical and 40 obstetric. He feels that the building is ideally constructed for the addition of such a unit and showed us a suggested attachment of the new wing by an extension of a wing newly constructed. It was our feeling that there was question as to adequate use of current beds prior to consideration of new beds.
- (8) fuel shortages - Our discussion led to identification of a severe fuel shortage problem which put some limitation on the current generators and, of course, would extend to any new generators. The oil refineries planned for construction here were never put into use and dependence on shipments from Phnom Penh by highway or rail,

when operator 1, is not dependable. We suggest consideration by the government to have fuel supplied by sea from South Vietnam for this town.

We toured the hospital and noted a number of post-operative surgical patients. We discussed the cases with Dr. Seng, the surgeon, and also looked at his OR and surgical supply area which are quite adequate for major surgery. Nevertheless, Dr. Seng limits his surgical activities severely.

Since a number of war wounded must come to this hospital, lack of thoracic or orthopedic surgery seems to be a major handicap.

Since a number of war wounded must come to this hospital, lack of thoracic or orthopedic surgery seems to be a major handicap.

Although we did not visit the refugee settlement area we were told that CRS has made a physician and 2 nurses available and has also established a nutrition program there. There is no apparent connection between them and the provincial hospital, however.

Most of the patients on the medical service were suffering from malaria and a few with nutritional problems. The young internists seemed to be quite capable of handling their patients.

Since it had been the pattern in other hospitals to separate paying from non-paying patients and since the government salary for physicians is obviously inadequate, we asked about the method of handling paying patients and private practice. This matter was not clarified though inquiries were made several times.

SUMMARY

(1) A well developed hospital with unrealized potential exists in

K. Som. Some moderate deficiencies exist relative to water supply and supply services in general.

- (2) The heavy emphasis on hospital care needs to be reoriented to focus on ambulatory (primary) care instead. No organized care for the refugees and the medically needy has been undertaken whether related to the town or the refugee camps, though CRS has talked of doing same. Continued disproportionate heavy investment in hospital development will certainly lead to many of the problems now suffered by the American model of health care delivery.

RECOMMENDATIONS

- (1) The Ministry of Health should evaluate the utilization of this facility, developing it to full potential prior to expansion of the physical plant. However, I would not suggest precluding correction of the problems of water and electrical supply and laboratory and supply services.
- (2) Some study should be made of the use of this facility by private patients. Since this is a relatively well-to-do resort town, it would appear reasonable to maximize the hospital support both by adequate payment for services by those who can afford it as well as by fund raising. In any event, I would strongly recommend that non-paying patients not be given short shrift in the availability of services to them.
- (3) The community medicine approach needs to be emphasized with development of dispensaries and medical care outreach teams strategically situated in refugee camps and city to deal with the underlying disease problems feeding the hospital. The latter would respond best to good public health

methods and practices. The fact that all the medical beds were filled with malaria patients or those suffering nutritional and gastroenteric disease supports the need for such an approach. An MOH program to survey the extent of such need followed by planning and development of a system of care for the K. Son area should be the next order of priority.

- (4) Develop hospital capability to produce simple I.V. fluids and give adequate supply of more sophisticated parenteral support supplies.
- (5) Reevaluate surgical capability of staff and strengthen it such that a broader range of procedures can be done (thoracic and orthopedic).
- (6) Delay further hospital development until above recommendations are accomplished.
- (7) A major supply and maintenance program through decisive governmental effort needs to be developed to assure adequate support of all types.
- (8) UN agencies could make a major input here in water supply development, malaria control and in the maternal and child health area. The MOH should be assisted in activating a meaningful WHO and UNDP effort and making UNICEF aware and committed.

The health statistics which were reported in the preceding site visit "frontispieces" were not available for Neak Locung at the time of our visit, October 1974.

NEAK LOEUNG (9 October 1974)

Neak Loeng hospital is located a very short distance from the banks of the Mekong River and within walking distance of the airport. The building is well appointed and physically in excellent condition. Immediately adjacent to the permanent hospital building were three wooden barracks-type buildings which had been constructed by CRS for patient care purposes, being almost identical to those seen at K. Speu.

We were met by members of the staff of the CRS facility and the military commander of the area but by none of the staff members of the hospital. Later, on tour of the hospital, we discovered that only one (1) of the provincial hospital staff members was, in fact, there, this being a national holiday (Independence Day). The two hospitals immediately adjacent to each other have virtually no sharing of staff. Patients from the hospital, however, are given bed space in one of the CRS building facilities.

One of the CRS buildings was being developed for ambulatory patient care and as a clinical facility for the treatment of advanced malnutrition in children. 25 beds are planned to be installed in the nutrition unit. During our visit a number of patients walked in for ambulatory care and were handled quite effectively and efficiently by the Filipino nurses, members of OBI, who were the staff. The OBI staff indicated that they had a heavy schedule visiting the refugee centers surrounding the town and we later visited one of these areas. The survey of the refugees indicated sufficient severe malnutrition problems to justify a feeding program for the refugee sites as well as the clinical facility previously described. Six patients so far have been identified for the latter.

The CRS facilities were clean, well kept and quite functional. Equipment

had not yet all been obtained, but was in the process of being established. Dr. Maurallon, a Filipino physician (OBI), indicated his great concern for the poor medical care given in the provincial hospital facility next door. He felt, however, that he could not overstep his bounds unless invited but expressed the willingness of the OBI team so to do.

A tour of one floor of the provincial hospital building revealed great disorder and lack of cleanliness in a facility whose capabilities were potentially quite good. Although there were 27 Khmer medical personnel staffing the hospital, one (1) was in the hospital on the day we visited. The one staff person who had remained is to be commended; she was a midwife who had delivered a baby in the earlier morning hours and had stayed with her patient who was suffering some bleeding complications after delivery. We were told that the physician-in-charge and his supporting nursing staff were negligent in their attendance. Dr. Tekto, from the Ministry of Health, was present and took copious notes indicating that he would take action to remedy this situation.

A third medical facility also exists, a military hospital with 18 beds, but we did not visit it. We were assured by several persons that it was one of the best military hospitals, even though it is quite small. The military commander also was very much concerned about the inadequacies of the government hospital and expressed his dissatisfaction freely.

It was also expressed that there was concern about the diversion of supplies and equipment slated for the provincial hospital to other purposes.

The water supply system comes directly from the Mekong River, being

pumped into a combined water tower and filtering system. Unfortunately the system was only being partially utilized since the filtration mechanism was being completely short-circuited, thereby supplying the hospital with raw river water.

Extending south along the banks of the Mekong for a distance of about 4-5 km is a resettlement area which is subdivided into village-like entities. This is separated from the town to the north and enemy forces to the east by a marshy area. The perimeter of the refugee camp is well protected by military outposts. We visited the southern end of this area by helicopter. It had previously been a plantation and the very rich land was being replanted with fruit trees and gardens. Refugees were also engaged in fishing, primarily with traps. Most of the refugees had come across from the western side of the river which was Khmer Rouge territory. CRS has Khmer representatives there who were assisting and advising in crop establishment and the distribution of food as well as assisting in screening health status.

SUMMARY

1. Three hospitals are available: one, a small but excellent military hospital; two, a recently reconstructed CRS hospital for ambulatory care and severe malnutrition in children; and three, a provincial hospital which is basically well constructed but being poorly utilized and improperly used by a staff under apparently weak ^{management}.
2. CRS is heavily involved by (1) staffing with health personnel also involved in nutrition activities ranging from planting to feeding, (2) the establishment of resettlement areas and (3) providing some relief to the provincial hospital.

REPORT ON THE CAMBODIAN HEALTH CARE SYSTEM
SITE VISITS-Neak Loeng

3. This is an active military area which through energetic leadership is able to both fight and cope in a much better fashion than what was seen at Takeo.

RECOMMENDATIONS

1. Consolidation of military, provincial and CRS health efforts into an integrated delivery program under MOH leadership. This represents probably an ideal opportunity for consolidation of resources for the improvement of health and humanitarian aid in a fashion which should be widespread throughout the country.
2. Closer supervision of the medecin chef and his large staff would provide better leadership spearheaded by the MOH.
3. Expansion and increase in the nutrition support program at every level to include crop planting, food distribution and clinical nutrition services.
4. Add to existing resources to establish a hygienic and adequate water supply system for the hospital.

POPULATION, HOSPITAL BED AND HEALTH PERSONNEL STATISTICS - Takeo

Population Province 470,058

Capitol 86,000

Hospital Beds

Official 114

Temporary -

Other - operating 102

planned 0

TOTAL operative 102

future -

Beds/1,000 people

Current .217

Future -

Numbers of Health Professionals

Government figures

MDs 2

Pharmacists 0

DDS 2

Midwives 12

Nurses 62

Health Professional Ratios

MD .004/1000 or 1/250,000

Pharmacist 0

DDS .004/1000 or 1/250,000

Midwife .026/1000 or 1/38,462

Nurse .132/1000 or 1/7,576

TAKEO (9 October 1974)

Prior to visiting the provincial capital we were told that it was an exceedingly "hot" military spot and that as a consequence the airport had been closed for over a month, making it extremely difficult to bring in supplies or personnel from Phnom Penh. When we arrived by helicopter we were met by the province chief who was also the military commander, and given a briefing. The capital city was obviously extremely crowded and apparently all the land was controlled by the Khmer government. We were told that it now contains approximately 86,000 people, 26,000 of whom (7500 families) were refugees. They were temporarily housed along all of the streets and roads and their status was generally unsatisfactory. World Vision, CRS and IOC have been involved. World Vision has established a 425-family camp and plans to supply food and seeds for 1000 families; construction is as yet incomplete. CRS is distributing food for 2050 families. Very little land is available for resettlement because of the closeness of the military perimeter of action (7 km). 80% of the refugees are actively employed, many of them farming their own land during the day and returning to the safety of the city at night. Others are hired to work on rice farms. It is estimated that sufficient labor is available for cultivation of 10,000 hectares but that only 6000 hectares are currently in use, because of the military situation and severe flooding. The Khmer Red Cross has also been active here helping about half the families although some reports say as many as 5000 families. World Vision has been prepared to send an ambulatory care medical team consisting of one Khmer physician, two Khmer nurses and one Australian nurse as soon as housing is available on the hospital grounds. Repeated attempted contacts with the

military governor have so far failed to get a housing commitment.

We visited the hospital which was undoubtedly the most inadequate and primitive of any we saw in the entire country. We were told that 114 beds were available, 70% of them being occupied by soldiers with an additional 30-35 beds taken up by civilian wounded and refugees. No water or electricity was available although a large cistern was seen that could have been used not only to catch rainwater but also as a receptacle for water pumped in from the city. Emergency surgery is done in a filthy, non-equipped area that reminded me of an autopsy room. We were told that a new hospital existed on the outskirts of town but that after it was destroyed by warfare the return to the original, 9 year-old hospital occurred, under these circumstances which they were unable to control. The new hospital structure is now being used by the army partially as a dispensary and partially as a military barracks. We were also told that a city water supply and generator existed but that due to lack of fuel neither is functioning. Two temporary metal buildings which have been put up by the Japanese were inadequately used, and in fact one was partially collapsing. These were to have been used for children. The obstetrical area represented a slight improvement over the rest of the hospital. A large public building which is well kept on the grounds of the hospital was seen in sharp contrast and although it is proposed to be used for staff occupancy for the World Vision team, one wondered why it could not be used by the patients.

Best estimates indicate several thousand Khmer Rouges surrounding this town. They live in adjacent mountains and raid Takeo and surrounding rice fields at will. Although supplies and personnel supposedly cannot be flown in, CRS nevertheless has been flying in food supplies for their soup kitchens and feeding stations. A view of the unused airport from the air prompted some

questions as to the validity of its non-use.

SUMMARY

1. This is a city under siege, surrounded and cut off much of the time from everything. This has notable effect on food, supplies of all kinds and communication and movement of personnel.
2. Provincial hospital in its old previously abandoned site is little more than a holding area for the sick and wounded. Furthermore, the lack of water, electricity and poor hygienic status of the hospital probably contribute significantly to illness.
3. City is overcrowded with refugees creating not only a severe housing problem, but also a public health problem related to lack of power, water, food and disposal of human waste.
4. Food production is limited to about 60% of what could be possible if military stand-off were not limiting.
5. Military status quo is debatable in view of small number of insurgents (1500-2000) and potentiality of government forces, especially in the face of the severe health and other needs of the city. A considerable number of Khmer government forces (perhaps 1/3) are disabled through illness.

RECOMMENDATIONS

1. Renovation of some of existing hospital buildings and construction of some new ones to house an adequate hospital. Also, adequate equipment, electricity (generator) and water (wells) needed. Resources should be mobilized to accomplish this as was done in Neak Loeng and as is being done in K. Speu.
2. Staff hospital with voluntary agency teams as soon as possible (CRS,

World Vision, and/or IOG) to give basic medical care and expand nutrition services. Allow volags freedom of development of own supply capability including fuel, to insure continuity of programs, as well as bringing in MESH unit equipment.

3. Develop capability for mobile medical care coverage of refugee sites to include mobile teams and on-site dispensaries.
4. Develop dispensaries and feeding stations in the town of Takeo to cover refugee needs within city.
5. Expand organized refugee settlements if at all possible to decrease crowding and consequent public health problems within the town of Takeo. Also expand crop capability for rice and gardening.
6. Reevaluate military status to re-establish more adequate transportation and communication linkages for supply and triage purposes.
7. Negotiate with the military to share the medical costs since this represents the lion's share of the medical operation.
8. Assist and support MOH so that it can properly evaluate medical care needs of the population and carry out planning and initiation of appropriate programs in association with volags.

III. MINISTRY OF HEALTH

1. Budget Consideration

On 2 October 1974 Drs. Kennedy and French held a meeting with Dr. Kim Vien, the Minister of Health. Also present were Dr. Tekto, Mr. Jacobs and Mr. Adams. The meeting began by reviewing a similar meeting held in June 1974 shortly after Dr. Kim Vien assumed the position of Minister and at which time he indicated his dedication to a massive increase in the Ministry of Health's budget allocation from the National Legislature. Our interview began with an update of the results of these budgetary requests. Because of the monumental needs to develop the Khmer Republic's Health System, Dr. Kim Vien had had hopes that as much as 10% of the National Budget might be dedicated to this purpose. Since that time the National Assembly had passed a health budget which in effect maintained the purchasing power for health at approximately the same level as the previous year. Indeed, this meant an increase in the health budget, but the effects of devaluation of the riel and inflationary price increases of commodities resulted in no net increase in terms of purchasing power, even though the budget figure was almost double that of last year.

Table I.

RECAP OF NATIONAL BUDGET FOR HEALTH*

Ministry of Health Budget - 1973	1,331,275,504 R (riels)
Ministry of Health Budget - 1974	2,108,914,940 R
Devaluation of Riel (US\$:riels) - September 1974	
1973	1:420
1974	1:1200
National Budget	1974 72,000,000,000 R
Per cent of National Budget for Health (1974) 2.8%	

*For more complete breakdown of the National Health Budget, see Appendix II

It was agreed that an admirable guideline for health budgets in most developing countries is 4% of the national budget. Dr. Kim Vien indicated that unfortunately only slight changes had been possible compared with past budgets. We then explored the possibility of increasing medical care expenditures by input from the various agencies of the UN (UNICEF and UNDP in particular). It was made clear to the Minister of Health that these agencies had been contacted in New York the preceding week and that they expressed their willingness to increase their fiscal participation in the Cambodian health system; and that this, combined with funding from the U.S., might help to approach the goal of a Ministry of Health budget equivalent to approximately 4% of the National Budget.

The admittedly inadequate budget for support of medical care (and this virtually means the support of the hospitals in various provinces) is committed once yearly and there is no opportunity to bolster the budget if increasing demands are made because of warfare or other catastrophe. After discussions with the military advisor from the American Embassy, it later developed that there was no budgetary transfer mechanism to cover the added costs of military war injuries, even though from 60-75% of the hospital beds in most places might be occupied by military personnel. We viewed this inequity with considerable alarm since the consequent increased draining off of already inadequate funds from the civilian health care budget could only make a poor situation worse.

One of the issues of great importance was the appropriate use of Khmer health professionals within the Khmer medical care system under the Ministry. The top pay for physicians employed to work in the various Ministry jobs is equivalent to about \$15 per month. The pay for other health personnel is proportionately lower. Government utilization of the Khmer health professional amounts to often as little as 1 out of 8 hours in a day, with the remaining time spent

moonlighting in private practice in order to supplement incomes to a level commensurate with their status (approximately \$500/month). UNICEF HQ in New York had indicated their willingness to pay program costs in Maternal and Child Health programs that could in turn be used as salary support. Ostensibly, other UN funds or USAID funds could be used similarly. The response of the Ministry was a willingness to explore the development of such a salary support program in return for which assurance would be given that health professionals would work full time those hours for which they were paid.

Since justification of program budgets is essential to obtaining funding, the Minister was asked if he would be interested in receiving assistance in preparation and analysis of budgetary and fiscal matters from outside sources. It was pointed out that increasing the sophistication of the Ministry of Health in budget and fiscal matters, including the development of a feedback system which would later indicate the nature of actual expenditures within the provinces, would probably, in the long run, lead to increasing the budget from multilateral as well as bilateral sources. The Minister was quite pleased with this suggestion and indicated his willingness to take a person (TCN) into the Ministry for this purpose. He was concerned, however, with jealousies that might be created in other ministries if such a program were successful. Our response was that such services would be reported strictly in-house and it would be entirely left up to the Minister as to how they might be utilized, in order to minimize competitive reaction from other ministries.

We also proceeded to develop the concept that data other than financial are meaningful input in the justification of program development. Ultimately it was concluded that several people working within the Ministry of Health utilizing Khmer personnel in the outlying areas, including Phnom Penh, to gather information to feed into a system set up to meet their peculiar needs

would be ideal. It was anticipated that such consultative backup would be self-limiting in that Khmer personnel would ultimately assume the total responsibility for its management and operation. Data developed on needs justifying program planning (which in turn could be presented to USAID, other governments and the UN, as well as the Khmer National Assembly) would be the basis from which a model would be evolved. Drs. Kim Vien and Tekto wholeheartedly approved of such an approach.

2. Role and Limitations of Voluntary Agencies

The various voluntary agencies functioning in health and humanitarian areas have been described as each being relatively independent in its operation. I indicated that it was the desire of USAID to have better coordination of all of these activities and that we felt this was the prerogative of the Khmer Government. Specifically in the area of health, this would mean complete control and coordination by the MOH of all programs funded through bilateral or multilateral sources, even though they be run under foreign national auspices. Dr. Tekto indicated that this had long been the desire of the Ministry of Health and that he planned to call a meeting for such a purpose. On 3 October 1974 Dr. Tekto, as Director General of Public Health, invited 11 such agencies along with representatives from the Ministry of Refugees and Community Development. Later reports indicated that this meeting was highly productive in that it established the jurisdictional supremacy of the Ministry in regard to the various service programs of the volags. Such meetings are planned to continue on a regular basis in the future.

3. Function of Director General

It was interesting to note that Dr. Tekto's new role as Director General had been solidified into what, in many European countries, amounts to the civil service director of the health system under a political health ministry. Later discussions with Dr. Kim Vien and Dr. Tekto firmly established this principle and it was anticipated that continuity within the medical care system would

Be firmly established for the first time. When one considers that at least 4 (four) health ministers have come and gone over the last several years, this new approach assumes a considerable importance.

4. Organization of MOH

Mr. Paul Ignatieff, Director of UNICEF programs for Cambodia, offered some interesting insights into the Ministry of Health. The Central Committee for Coordination had formerly been under the major influence of the Chief of Hospitals, which had resulted in ineffectiveness from the point of view of programs of ambulatory or preventive care nature. The Central Pharmacy System has been under the control of an individual whose leadership has resulted in a tremendous stockpiling of outdated drugs and the continuation of an archaic system for distribution. The result has been almost a complete lack of any modern pharmacy control mechanisms and a supply system that has little or no meaning within the city of Phnom Penh and even less applicability to the provinces. Dr. Tekto is considered by virtually all an individual who is really giving his utmost and is generally accorded to have a fund of knowledge and sense of organization that would be required to carry out his role as Director General. The Ministry of Health is seen as developing a flexibility heretofore absent and a responsiveness to recognition of the true nature of an emergency that exists in the health system. Foreign agency relationships with the Health Ministry have always been delicate. They certainly cannot place themselves in the position of showing up the Health Ministry or asking it to deliver that which is impossible, no matter how desirable. The latter approach consistently leads to bottlenecks and resistance rather than cooperation. However, dealing with the Health Ministry on its strengths has been unusually productive and certainly the rapid growth and effectiveness of UNICEF programs seems to bear this out.

It now appears that good planning methods at last can be established,

allowing for the institution of programs tied to funding, even if from multiple sources. A most critical first step will be to plan for the separation of the health care development of provinces and the health care necessary to support the military and civilian injured, which now consumes such a large portion of the medical care budget.

Table II

MONTHLY CIVILIAN DEATHS AND INJURIES (FOR THE MONTH OF SEPTEMBER 1974) -
 BY HOSPITAL (Civilian Hospitals)

<u>Hospitals in Phnom Penh</u>	<u>Civilian Wounded</u>	<u>Civilian Deaths</u>
Preah Ket Mealea	250	8
Amitie Khmero-Soviet	228	7
Russey Keo	80	4
Sathearanadroth	195	3
Calmette	8	0
Institut d'Ophthalmologie	81	0
<u>Hospitals in Provinces</u>		
Siem Reap	75	7
K. Chhnang	110	20
K. Speu	150	15
Kampot	285	20
K. Seila	150	52
Koh Kong	60	4
Takeo	82	6
K. Cham	150	15
Batambang	228	40
Pursat	53	7

(continued)

TABLE - continued:

(Hospitals In Provinces)	(Civilian Wounded)	(Civilian Deaths)
K. Thom	110	15
Prey Veng	183	25
Svay Rieng	<u>150</u>	<u>6</u>
TOTALS	2628	254

5. Health Planning

We indicated that it should be possible to develop teams capable of working in the population pockets remaining under government control in the various provinces. Although this isolation of the population is an unfortunate occurrence of war, on the other hand it would indeed simplify the collection of data and consequent organization and development of care delivery.

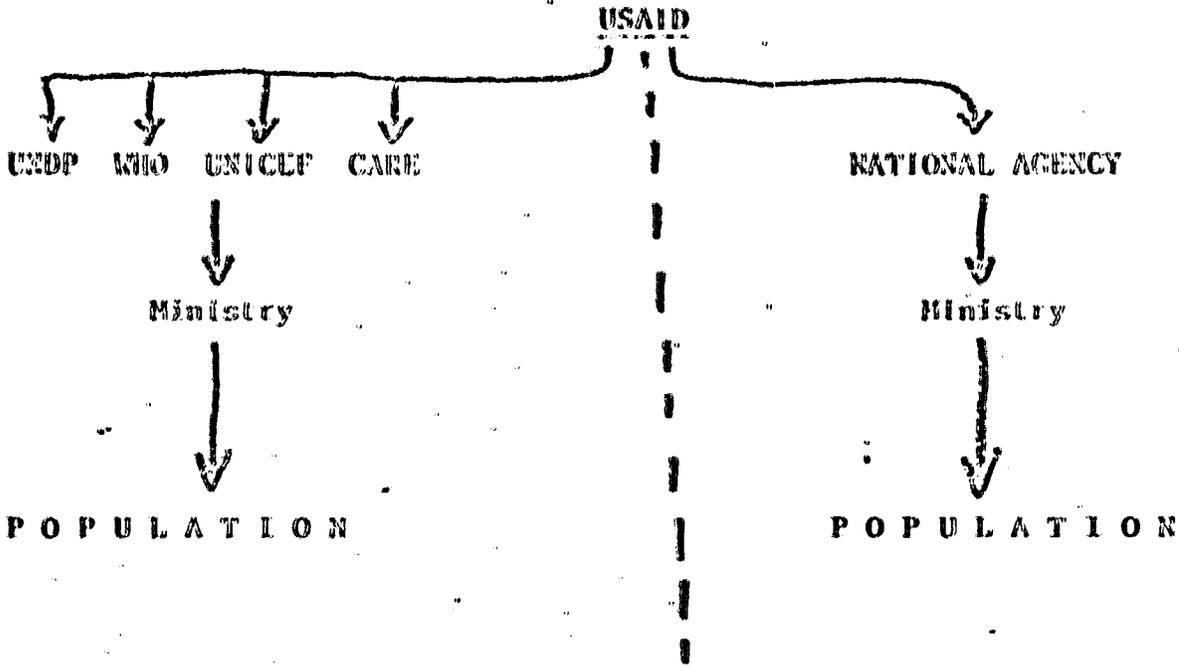
Later meetings were held with Dr. Tekto where he further shared his thoughts with us regarding the development of a health plan for Cambodia. He indicated a flow of funding from USAID in a bilateral fashion--on the one hand, going through the national government to the Ministry of Health and then out to the population; and, on the other hand, he indicated the hope that further USAID funding would be added to multilateral channels such as UNDP, WHO, UNICEF and CARE and through the Ministry of Health and again to the population (Refer to the following diagram. Page 56.)

He indicated the desirability of doing this planning over 5-year blocs of time and further indicated that additional planning capabilities such as we had suggested for the Ministry of Health would indeed allow him to accomplish this. Dr. Tekto said further that a Bureau of Planning and Statistics existed and that funding had been requested through WHO channels for its support. Funding was proposed to have come from the Ministry of Health as well and he

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FIGURE 1.

"TEKTO PLAN" - FLOW OF FUNDING FROM USAID THROUGH THE HEALTH MINISTRY



identified project numbers 9601 (in regard to the national plan) and 4301 (relative to the proposed WHO component) which he cited as evidence of their attempt to accomplish organized planning and development capabilities. Dr. Tekto felt very strongly about the fact that there had never been any realization of these project proposals nor in fact any response.

Dr. Tekto was not very sanguine about successful funding of health projects, either through WHO or UNDP

On the other hand he indicated their great pleasure with the approaches used by UNICEF and the successes they were already beginning to see as a consequence. Dr. Tekto strongly recommended a change in the review mechanism under UNDP and WHO for proposed programs. He suggested that a commission be formed of two people, consisting of a technical expert and a physician who would tour the country and review the health programs as well as the budget and other pertinent data. Dr. Tekto's plea sounded like an appeal for a review alternative to circumvent what he felt was an unfair bureaucratic mechanism.

TABLE III

KHMER NATIONAL BUDGET FOR THE MINISTRY OF HEALTH - Comparison, 1973 and 1974

<u>ITEM</u>	<u>1974**</u>	<u>1973**</u>	<u>Difference</u>
Ministry of Public Health			
Personnel	13,000,000	9,558,900	3,441,100
Material	1,594,000	1,200,000	394,000
Medical & Sanitary Services			
Personnel	750,000,000	579,532,754	170,467,246
Material	78,411,000	55,100,000	23,300,000
Medication (for Hospitals) & Laboratory Equipment	400,000,000	250,000,000	150,000,000
Food & Dietary Services (Patient)	674,681,200	306,000,000	368,681,200
School for Nurses & State (Registered) Midwives			
Personnel	16,000,000	10,522,900	5,477,100
Material	6,800,000	5,500,000	1,300,000
Institute of Biology			
Personnel	11,599,700	7,059,400	4,540,300
Material	12,376,000	9,085,000	3,291,000
National Blood Centre (Blood Transfusions)			
Personnel	6,500,100	4,947,100	1,553,000
Material	36,717,840	14,500,000	22,217,840
Direction of Public Hygiene & Preventive Medicine			
Personnel	94,246,100	69,269,450	22,976,650
Material	9,000,000	9,000,000	0
TOTALS	<u>2,108,914,940</u>	<u>1,331,275,504</u>	<u>777,639,436</u>
.....			
	<u>1974</u>	<u>1973</u>	
Personnel	889,345,900	680,890,504	
Material	1,219,569,040	650,385,000	

*all figures are numbers of riels

**NB: devaluation of riel, September 1974 (US \$:riels)
In 1973 - 1:420 in 1974 (Sept.) - 1:1200

Voluntary Agencies (Volags)

IV. VOLUNTARY AGENCIES IN CAMBODIA

A. General Discussion

On 2 October 1974 a meeting was held at the Resettlement and Development Foundation (RDF) offices which included representatives from CARE, Catholic Relief Services (CRS), and World Vision as well as Dr. Tekto from the Health Ministry and Mr. Jacobs and Mr. Adams from USAID. Dr. Tekto introduced the discussion by reviewing the military situation as it has developed from 1970-1974 indicating that although initially the refugee problem was not an exceedingly large one, nevertheless it has progressively become more severe. The matter of war casualties was also reviewed, indicating that both military and civilian war casualties were creating a serious load for the civilian hospitals. As indicated elsewhere in this report we were impressed with the fact that often 60-75% of patients in a particular hospital might be military personnel. The situation in this regard relative to Phnom Penh was used as an example.

There are four hospitals in Phnom Penh, two of them large general hospitals, one an annex and one a convalescent hospital. The two large hospitals, although originally designed to have no more than 500 beds each, usually found their bed occupancy by wounded rising into the neighborhood of 1500. In addition the attendance by families of patients often swelled the hospital population to as much as 2-3,000. It was felt that in Phnom Penh perhaps 50% of the beds were military and it was indicated that priority was given to military patients. The fact that there were perhaps as many as 400 beds at the Chinese Embassy Hospital was mentioned but because of the delicate matter of diplomatic problems the discussion did not expand upon its utilization. There is also an 1100-bed military hospital which apparently

HOPITAUX DE PHNOM PENH TABLE IV.

<u>Militaires</u>	Lits
Monivong	520
701	786
400	400
101	156
Enfants militaires	20

1882

<u>Civils</u>	Médecins	Officiers de santé	Dentistes	Pharmaciens	Para médical	Domestiques	Total
PREAH KET MELEAH (592 lits)	33	12	2	5	632	440	1127
Kambro Soviétiques (512 lits)	28	1	2	1	377	197	606
Sotheanaroth (300 lits)	6				131	55	192
Russey Koo (240 lits)	2	2			68	21	93
Nombre de lits : 1644							
TOTAL	68	15	4	6	1208	713	2018

was inadequate for the handling of military casualties.

Most of the wounded represented severe cases transported into Phnom Penh from outlying areas of conflict in the provinces. Two characteristics of the hospital population were emphasized: (1) the much longer stay of the wounded, and (2) the prolonged stay of military malaria patients. Since the civilian hospitals are so heavily utilized that they displace beds needed for civilian care and since the cost of the care in civilian hospitals has come from the Ministry of Health, two possible solutions were developed: (1) that the military establish convalescence facilities to care for the prolonged recovery of wounded and malaria cases beyond the acute phase, and (2) that the military develop a payment transfer mechanism to the Ministry of Health to cover the cost of care. Such an approach would seem to be considerably cheaper than expanding military hospitals and personnel. It is important to recognize the fact that the population of Phnom Penh has more than doubled since 1970 through the influx of refugees while at the same time the capacity to expand the bed capability of the hospitals has remained static. The result is patients being jammed into rooms, hallways, passageways, creating the most unsanitary and disorderly arrangement imaginable and obviously markedly reducing the effectiveness of the hospital. The staffs of the hospitals likewise have not been enlarged and the meagre attendance on their part as a consequence of their poor pay by the government of Cambodia further exacerbates the situation. I refer you to the report by Dr. Kennedy on Phnom Penh hospitals made earlier this year, which more completely describes the hospital situation.

It was further developed in this meeting that more adequate use could be made of the dispensaries which the government runs in Phnom Penh if they were upgraded to give comprehensive ambulatory care. This in turn would relieve

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Voluntary Agencies

the hospital load considerably. The voluntary agencies (volags) are prepared to become involved in this process. UNICEF is about to institute a program in conjunction with CARE and other agencies to upgrade many of the city dispensaries and CRS, in addition to running a nutrition hospital for children, will soon allow the use of Dr. Penny Key in one of the large municipal hospitals to develop and expand its pediatric services.

The question of use of Cambodian health personnel was touched upon and it was indicated by Dr. Key that when paid an adequate salary they were quite effective in handling basic medical care needs. Again the idea of subsidization of Cambodian health personnel instead of the importation of expatriate health personnel was dealt with. A physician sets his income goal at approximately 200,000 R per month. The matter of subsidy had previously been discussed with WHO offices and, hopefully, an agreement will soon be reached with them to allow such subsidization, although rapport between Health Ministry officials and the current WHO staff is weak.

During our visit we heard numerous discussions which seemed to indicate that there was a vast reserve of untapped health personnel. Considerations of their quality were extremely varied but by and large they were viewed as adequate to meet the basic needs of the population. The matter of bringing in expatriate physicians for training of Khmer personnel was thought by many to be a good idea and the need for a well organized post-graduate training and education program centered in the ambulatory care system was generally thought to be desirable.

Lastly, the matter of poor management was discussed. The function of the hospitals as well as the 12 dispensaries in Phnom Penh could be markedly improved with better overall management and supervision. Trained personnel

for this purpose are virtually nonexistent and, again, the desirability of a training and education program in Cambodia to develop such personnel was thought to be highly desirable. An example of management difficulties was highlighted by taking a look at the distribution of pharmaceutical supplies. The government has a large, central supply depot which also has the capacity to manufacture parenteral fluids and medications. A tour of this warehouse revealed a vast supply of outdated and currently unused medications left over from the remote past. The materia medica of 50 years ago must have been used to supply this warehouse. This is reflected in the medication supplies available in the clinics (virtually none) as well as in the hospitals. Certainly their capacity to produce certain medications could be better employed and the money spent in a more sensible fashion relative to pharmaceuticals kept in supply. A restructuring of the entire pharmaceutical system for the country would have to occur in order to remedy this problem.

B. The CRS plan for the period of October 1974 through April

1975 is an ambitious program with 5 major components aimed at better meeting emergency medical needs of refugees, upgrading of dispensaries and other complexes with permanent staff, development of special service programs, the development of training programs for local personnel and the assignment of staff to specific areas as a training exercise preliminary to turning it over to local personnel. During a visit at CRS headquarters in Phnom Penh we also discussed the matter of supervision of outlying projects, using as examples the difficulties met in K. Speu, the matter of negotiating with the health personnel in Battambang, the development of a successful project

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VOLAGS

Integrating with the provincial hospital in Neak Leoung, the expansion of mobile care in K. Thom and the anticipation of extension in Pai Lin, Siem Reap and Pursat/Krakor. All of this suggests a highly diversified program spread over considerable geographic area which must be well supervised and coordinated.

At present Dr. Gay Alexander has the entire responsibility, not only for that supervision, but for the development and operational management of projects in Phnom Penh and environs. It was our impression that the effectiveness of such a large operation could be improved by assumption of responsibility for all of the coordinating aspects of this program as well as programs run by other volags by the Ministry of Health. The danger of independent program growth and development by one agency isolated from other agencies and the Health Ministry is quite real and in the case of CRS the program is in danger of becoming topheavy.

C. WORLD VISION

The activities of World Vision are described as being housing, economic development and medical care. World Vision is responsible for nine projects in four provinces. This report will deal primarily with the medical operation. The medical operation is carried on by four teams functioning in a mobile fashion, for the most part in the environs of Phnom Penh, although one team is described as being active mostly in the outlying provinces. Eleven refugee camps are serviced in the Phnom Penh area. Only the Cambodiana camp receives daily services, all others being seen on a per session basis varying usually between one and two mornings or afternoons per week. The provincial team has visited Pursat, K. Chhanang and Battambang. They anticipate extending their activities to Takeo when quarters are made available. Most of the care is concentrated on children and pre- and post-natal care, and

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a considerable amount of time and effort is spent identifying and combatting nutritional problems in children. Most of the latter has been possible on an ambulatory care basis by providing supplementary feeding. Periodically children with marasmus or kwashiorkor are identified and are admitted to the special nutrition hospital run by World Vision.

The nutrition hospital was visited and was an example of excellent special care. It is staffed by one part-time expatriate doctor and one full-time Khmer doctor, 4 expatriate child health nurses, 6 trained Khmer nurses, and 26 auxiliary Khmer nurses. The hospital is run on a 24-hour basis and functions not only in the capacity of supplying nutritional needs but in addition gives excellent medical care for the associated medical problems which are often found, such as tuberculosis, malaria, severe eye and neurological problems, gastroenteric disease and occasionally cardiovascular collapse.

Dr. Penny Key made statistics available to us for the nutrition hospital covering the period of June through September 1974 (Table V). During that period, 580 admissions with 85 deaths occurred in this facility. The established fact of kwashiorkor and marasmus can no longer be doubted for, in addition to these statistics, we took numerous photographs which are available.

Dr. Key was in the process of completing a study of activities at the Cambodiana Clinic in the period between August 20 and September 5, 1974 on all patients seen for the first time. The sample included 2,000 consecutive patients, the majority of whom were refugees. (Table VI).

It is interesting to note that less than 20% came from the Cambodiana camp itself, an indication of the vast dispersal of the refugee population throughout the general population of Phnom Penh. It is also interesting to note that patients were coming from the regions of the AKS hospital and the Chinese Embassy Hospital. Only 25% of the patients were over the age of 13

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and in that group almost 57% were suffering from at least one of the three most common disease groupings: vitamin deficiencies, gynecologic problems and respiratory disease. Under 13, the top three medical conditions were severe enteritis, respiratory disease and protein-calorie malnutrition. Almost 53% of the patients in this age group are included in these three diagnostic categories. Conclusions from studies of the children were listed as follows:

- (1) no child over one year of age had achieved the International Standard for weight for age;
- (2) children of up to 8 months of age compared favorably with the International Standard of weight for age;
- (3) a very small minority of children over one year had achieved the third percentile; and
- (4) the average weight for age of the entire sample was well below the third percentile, all ages being equally effected.

D. CARE

Program activities of CARE have been primarily in the areas of food assistance, emergency shelter and resettlement. These activities have covered, in addition to Phnom Penh, K. Chhnang, Pursat, Siem Reap, Oddar Meanchey, K. Speu and Kandal. The October statistic report indicated food assistance to 29,800 families, emergency shelter to 2500 families, and resettlement for 1600 families. CARE is about to embark upon medical responsibilities in association with UNICEF and others involving the dispensaries in Phnom Penh. The latter will be described later in the report on UN involvement in Cambodia.

E. INDOCHINA OPERATIONS GROUP (IOG)

Mr. Perez was again visited, updating information and impressions received in June 1974. Since that time he had replaced his medical director with a

Dr. Grellity who was later visited in K. Chhuang. Under Dr. Grellity two mobile teams are being developed which will have the capacity to move in and out of hot spots relative to acute care needs. IOG, being primarily under the influence of the International Committee of the Red Cross (ICRC), sees itself as being justified only to function under strictly emergency conditions, as a Red Cross subsidiary. For this reason it never anticipates remaining in one spot for a prolonged period. As a result the situation described earlier as to K. Thom had occurred and we discussed the future of K. Chan which they had recently left in the hands of a Khmer surgeon. The excellent surgical capabilities of their teams is unquestioned and one would anticipate that the same medical capability would be evidenced by the two mobile teams above described.

It was our feeling that closer coordination with the Ministry of Health would be necessary to prevent loss of medical care delivery capability on the movement out of an area by an IOG team. This is yet another aspect of Health Ministry development which is needed in order to staff and maintain supplies and equipment to such areas.

F. CONCLUSION

In my discussions with the various volags I remained concerned by their relatively independent operations not only in regard to each other but also in regard to the Ministry of Health. It had not always been thus and I was informed that at one time CRS, World Vision, and IOG had established a regular meeting agreement. Unfortunately the Asian Christian Society (ACS) and other smaller agencies had not been involved. Early in 1974 representatives from the Ministry of Health and WHO were included. The Health Ministry at that time sent only junior representatives. WHO involvement became so controversial in nature that the organization broke up and meetings stopped in May 1974. The nature of the disagreement was around

the issue of the extent and degree of malnutrition in children and the same in regard to tuberculosis and malaria. The volags felt that, based on their day-to-day experience, low WHO estimates were completely unjustified.

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TABLE V

TEOL KACK NUTRITION CENTER*

JUNE - SEPTEMBER 1974

Admissions	580
Deaths	85

<u>Classification of Cases</u>		<u>Mortality (where applicable)</u>
Kwashiorkor	152	11.1%
Marasmus	293	7.8
Gastroenteritis	33	36
Vitamin A Deficiency	32	
Severe anemia	10	2
Abandoned children	25	
Others	35	

* reproduction of report submitted by Dr. Penny Key, Medical Team Leader of the Nutrition Hospital

REPORT ON CAMBODIANA CLINIC BY DR. PENNY KEY - SEPTEMBER 1974

DISEASE DISTRIBUTION

1. Age - 13 years and over

Disease Group	Actual Number	Percentage of Sample
Vitamin deficiencies	304	35.2
Gynecological	94	10.9
Respiratory	93	10.7
Dermatoses	71	8.2
Enteritises	68	8
Alimentary	57	6.6
Pulmonary Tuberculosis	39	4.5
Malaria	25	4
Anemia	22	2.5
Parasitism	13	1.5
E.E.N.T.	10	1.2
Others	34	4

All vitamin deficiencies in this group are Vitamin B group deficiencies.

Gynecological include antenatal examinations and requests for family planning. This sample is considered biased because of expatriate woman doctor.

Malaria is proven by blood examinations.

Anemia is a hemoglobin level under 9 grams.

Parasitism is symptomatic only.

(continued)

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2. Under 13 Years

Disease Group	Actual Number	Percentage of Sample
Enteritises	370	19.2
Respiratory	366	19.0
Protein Caloric Malnutrition	282	14.6
Vitamin B Deficiency	185	9.6
Parasitism	168	8.7
Dermatoses	148	7.6
Measles	100	5.2
Anemia	100	5.2
E.E.N.T.	96	5.0
Vitamin A Deficiency	38	2.0
Malaria	32	1.6
Tuberculosis	10	0.5
Others	35	1.8

Enteritises do not include the diarrheas of protein caloric malnutrition.

Protein caloric malnutrition group includes all those children with actual signs and symptoms of severe deficiency states. It does not take into account the level of weight for age.

Parasitism is symptomatic.

Anemia is a hemoglobin level of under 8 GMS.

Vitamin A deficiency includes those with actual clinical signs, not just complaints of night blindness.

Malaria is proven by blood examination.

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Child Nutrition

The weight for age for all children under 13 years was recorded and charted.

- a) Scattergram of all weights for age. [This is available from Dr. David French, Boston University Medical Center, Author.]
- b) Chart of average weights in each age group. [This is reproduced on the following page.]
- c) Graph of average weight for age compared with International Standards. [As in a), above.]

Conclusions reached from above:

No children over one year of age in the sample reached the International Standard weight for age.

Children of eight months and under compare favorable with the International Standard weight for age.

A very small minority of children over one year reached the 3rd percentile.

The average weight for age of the sample was well below the 3rd percentile. All ages up to 13 years were equally affected.

(continued)

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Age	Number of Children	Weight in kilograms
0 - 1 month		3.07
1 - 2		3.84
2 - 3		4.72
3 - 4		5.46
4 - 5		5.38
5 - 6	324	5.72
6 - 7		5.57
7 - 8		5.58
8 - 9		5.55
9 - 10		6.9
10 - 11		7.29
11 - 12		6.49
1 - 2 years	183	7.64
2 - 3	170	8.74
3 - 4	181	9.58
4 - 5	164	10.75
5 - 6	121	12.29
6 - 7	79	13.45
7 - 8	94	14.85
8 - 9	63	16.4
9 - 10	22	17.05
10 - 11	45	18.66
11 - 12	14	21.38
12 - 13	32	22.82

REPORT ON CAMBODIAN HEALTH CARE SYSTEM**UN AGENCIES****V. UNITED NATIONS AGENCIES IN CAMBODIA**

During the last week of September, UNDP (United Nations Development Program) and UNICEF (United Nations International Children and Education Fund), 2 of the 3 primary UN agencies involved in health care in Cambodia, were visited at their headquarters in New York by Dr. Isaiah Jackson and me.

At UNDP we were given various documents relative to the development of the UNDP Plan for Cambodia going back to the original background paper on the Khmer Republic of August 1971 (pp 90-93). Basically two 5-year programs, 1968-1972 and 1972-1977, are involved. The original background paper deals with the following issues:

A. Background Information

1. Inventory medical and health institutions
2. Inventory medical and health personnel
3. Population concentrations relative to the distribution of health personnel
4. Mortality figures for certain endemic diseases and infant mortality
5. Developing pharmaceutical manufacturing capacity

B. Goals to be Achieved in Three Five-Year Programs

1. Physical development of hospitals and infirmaries-
2. Development of adequate hospital beds
3. Manpower development - health professionals
4. Rural health development
5. Adequate partitioning of the national health budget to include development of preventive health capacity

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6. Capacity to care for the wounded
7. Capacity to develop realistic figures and sources for riel
to develop overall health goals
8. Capacity to survey destruction of health facilities and
equipment as a consequence of war and cost of replacement and
repair

**C. Role of WHO - major technical resource and overseer of health develop-
ment**

1. Special WHO program projects
 - a. TB control
 - b. Malaria control
 - c. Development of epidemiologic and medical statistics
 - d. Nurses training and administration of nursing services
 - e. Training of medical staff
 - f. Applied nutrition
 - g. Environmental hygiene
 - h. Public Health laboratory
2. Environmental development programs for control of infectious
diseases
 - a. Water supplies and sanitary project - 2-year 7 months project;
plan submitted December commencement date June 1973
 - b. Special projects for development of water supply for K. Som,
K. Speu and Phnom Penh
3. Project program in rehabilitation, physiotherapy and manufacture
of prostheses - project submitted August 1972

There is great need for updating and evaluating current status and outcome of UNDP and WHO and achievements, especially in view of special projects which have in fact been submitted, approved and supposedly accomplished.

In conferences with the WHO staff reports were supplied of surveys made by engineers, epidemiologists and various medical personnel. It was unclear, however, how these were to be translated into action programs. Additional input from the Ministry of Health did not clarify the status of proposed UNDP projects under the supervision of WHO. Considerable concern was expressed by the Health Ministry relative to the failure of WHO to institute programs or to carry out programs that had been approved.

It should be indicated that considerable interest on the part of UNDP officials in New York exists relative to their possible role in alleviating health care problems in Cambodia and they repeatedly indicated that there was concern about full utilization of potential resources through their agency.

The country plan for the Khmer Republic submitted to the UNDP covering the period 1972-1976 indicates the government's preference for multilateral aid. There is a major emphasis on training: "In their program proposals to UNDP there is a major emphasis on training activities through fellowships, through support for training institutions and almost throughout the program through the action of experts training their counterparts." An additional comment is made relative to technical assistance: "In the program requested

the main emphasis has been given to building up technical expertise within the government in preparation for the major task of reconstruction and to the planning of reconstruction, itself."

Perhaps part of the difficulty may relate to an organizational problem in that the UNDP Representative's position for Cambodia is vacant. In addition to a seeming willingness to expand UNDP monetary commitment to Cambodia upon request, it was also indicated that US funds could be channeled to the Khmer Government through a 3-way agreement for expansion or development of projects.

UNICEF undoubtedly represents the most active and effective UN agency currently involved in Cambodia. As a part of a campaign commitment to the entire Indochina peninsula, UNICEF has greatly accelerated its involvement in Cambodia. The assignment of Mr. Paul Ignatieff as their full-time representative was undoubtedly a wise choice and the progress that he has made in program development between my June and October visits is considerable.

Before describing the UNICEF program in greater detail it would be useful to include information gained in personal conversation with Mr. Ignatieff. As background, one should know that UNICEF had no prior experience as an operational institution until 11 months ago. It had been involved in Cambodia since 1952 in the passive role of making available supplies and equipment in support of various projects. With the assumption of an operational stance 11 months ago as a part of the Indochina commitment, the Cambodian health care needs that were zeroed in upon were drugs and supplies, including their distribution in a regularized fashion, and the development of Khmer staffing capabilities. The latter was subdivided into a problem of training and education of all health professionals as well as an almost total lack of administrators or managers. Motivation was identified as a serious problem and this was diagnosed as being relative to ridiculously low salaries. UNICEF's approach to the MOH has been

to establish an understanding of the desire to help and to do this under the leadership and coordination that would come from the Ministry, itself. Dr. Tekto is seen as being a tremendous asset not only in terms of his knowledge and capabilities but also because of his apparent political support. UNICEF undertook an analysis of the health care situation and developed the following approach. They would begin in Phnom Penh and later branch out in a similar fashion in selected provincial centers. As to Phnom Penh the number one priority seemed to be the establishment of as broad a network of ambulatory care as possible for the needy population. Since a rudimentary dispensary program also existed they proposed to improve it and add a nutrition program component. It seemed reasonable to assume that increased care at the ambulatory level would for some time create an increased demand for hospitalization. In looking at the hospital situation the PKM and AKS hospitals were evaluated. The PKM hospital was seen as having a basically good system with three problem areas: (1) inadequate funding to update the electricity and water supply systems; (2) inadequate organizational and administrative know-how; and (3) an extreme deficiency in availability of drugs and basic supplies. The AKS hospital, on the other hand, was seen to be very poor, having great needs in all areas. UNICEF undertook the greater challenge and in conjunction with WHO and CARE plans to carry out the program which is described later.

UNICEF is acutely aware of the need for financial incentive to bring Khmer personnel back into their own health care system other than on a private basis. The very positive experience of Dr. Penny Key with income supplementation has resulted in UNICEF taking the same course of action and strongly urging AID to do likewise. In discussing the needs of the outlying provinces, UNICEF feels that various population centers should be tackled, one by one,

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probably beginning with Battambang because of its potential resources as to hospital care and numbers of staff. They see the development of a network of health delivery whose sphere of influence would extend north and west of Battambang all the way to the Thai border.

IOG's role they view as an excellent one so far but of course tied strictly to emergency situations. For this reason, they are using all of their influence with the Health Ministry to establish Khmer follow up teams which would replace IOG teams when they move out. Foreign agencies are seen as being related to efforts only in a training and consultative sense. UNICEF sees its role being in the area of supply and logistics development and in the development of administrative know-how. UNICEF's great flexibility in funding, allows them to move very rapidly as they have done. Unfortunately WHO has not been able to keep up in its role of technical assistance and delivery of services. It is also important to note that current funding of UNICEF programs does not allow them to expand beyond the development of the 11 dispensaries and one hospital in Phnom Penh.

The UNICEF program is entitled, "Emergency Reinforcement of Health and Nutrition Services". Its total estimated cost for the remainder of 1974 through 1976 is \$970,000 (US). Its objectives are reinforcement and development of hospitals and dispensaries, support of drug and dietary supplements and provision of operational costs for health care and nutritional services. Funding resources are six: Ministry of Health, CIDA (Canadian aid agency), USAID, CARE, WHO, and UNICEF. The project is targeted toward displaced persons and the disadvantaged of Phnom Penh as well as to the provinces to a lesser degree.

The expansion of the population of Phnom Penh from 700,000 to 1.5 million between 1970 and 1974 has resulted in a seepage of refugees into the category of the nameless poor of Phnom Penh such that it is estimated in one report that

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perhaps no more than 10,000 are staying in 10 camps constructed for refugee use. The government's policy of discouragement of refugee infiltration of Phnom Penh has been unsuccessful and the establishment of the 10 refugee camps in the outlying periphery of Phnom Penh in itself has created problems relative to food distribution, sanitation and water supply. The latter result in secondary health problems and unfortunately inadequate access to health care.

Provincial problems are directly related to the occurrence of hostilities and in some instances were worse than what was seen in the capital city.

In March 1974 WHO assumed an operational role and aimed its efforts toward (1) environmental health, especially provision of safe drinking water; (2) treatment of malnutrition, especially in children; and (3) improvement of the delivery of health services in dispensaries and hospitals in Phnom Penh. Again it is recommended that a reconciliation of accomplishments dating back to 1968 and the assumption of the operational role in 1974 should be undertaken in the form of an evaluation of WHO activities over the intervening seven years. This is especially important since, again, WHO is supposed to be the technical and operational arm for UNICEF activities.

Proposed UNICEF initiatives in their newly devised plan are:

- (1) creation of an emergency medical stockpile - this is already well under way with the establishment of a warehouse adequately supervised and with the already rapid acquisition of medical supplies;
- (2) provision of medical and relief supplies through the Ministry of Health and the Ministry of Refugees as well as several volags;
- (3) support of a local women's association (VIARR) involved in relief and rehabilitation assistance to displaced women and children; and
- (4) assistance to volag nutrition teams.

The method of achieving the four goals in Phnom Penh is, first, to markedly

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improve the capability of the maternity and pediatric wards of the AKS hospitals; secondly, to physically update and effectively activate 11 existing dispensaries in Phnom Penh. Please note that WHO is expected to provide expatriate clinicians, supervise the dispensary delivery program and recruit Khmer doctors. In addition, UNICEF funds will be used to expand nurse participation in dispensaries and, lastly, UNICEF will so regulate the program as to assure the provision of preventive and curative services in general medicine, but, in particular, the maternal and child health area. The anticipated patient load is 200 patients/day/dispensary.

In the provincial program emergency supplies will be made available through UNICEF drug kits and dietary supplements provided for maternal and child health services.

In the area of nutrition, in association with CARE, nutritional supplementary activities will be established at each of the 11 dispensaries in Phnom Penh. Dietary supplementation through USAID PL 480 funds, UNICEF funding for high-protein supplements and drugs, and CARE funding for the operational responsibility. The anticipated patient load is 30 patients/day/dispensary with a built in capacity to expand the program by as much as 200 additional children per day.

Implementation is slated to begin in October 1974 with maternal and pediatric services operational by the close of 1974 and the remainder being completed during 1975. Services to the provinces have already begun. A current manpower chart for the dispensaries of Phnom Penh prior to the UNICEF program is included as Table VII.

TABLE VII
MANNING TABLE - PINNOM PINNOM DISPENSARIES

(NOTE: effective up to October 1974)

	<u>DISPENSARIES</u>											TOTAL
	SUM-HENG-LY	TUK LAEK	KULAO PHOY	ANG DUONG	TAK WACKARITH	TOUL KAKK	BE YEAN	TRP SAPHON	BOTTUM WADDEY	NEAS SAEM	NRAP VON	
Doctors	-	-	-	1	-	-	-	-	-	-	-	1
Medical Assistants	1	1	1	1	1	1	-	-	1	1	1	9
Dentists	-	-	1	2	-	-	-	-	-	-	-	3
Pharmacists	-	-	-	1	-	-	-	-	-	-	-	1
Nurses	9	9	6	23	11	8	9	5	4	6	8	98
Mid-wives	2	3	3	6	3	2	2	2	2	2	2	29
Laboratory Technicians	1	-	1	1	-	-	1	-	-	-	-	4
Health Workers	-	-	-	-	1	-	-	-	-	1	-	2
Cleaners/staff	10	8	10	25	9	9	14	7	5	8	11	116
Drivers	4	-	-	17	-	-	-	-	-	-	-	21
Total	27	21	22	77	25	20	26	14	12	18	22	284

VI. SUMMARY AND CONCLUSIONS

Almost all recommendations which have been made as a result of individual site visits in one way or another relate to the functional capacity of the Ministry of Health. Throughout the entire 10-day visit close contact with Dr. Tekto as well as sporadic contact with other members of the Ministry of Health further confirmed the necessity for modifying and upgrading the Ministry of Health. This should be done in two regards: first, as to the central operation, giving it the capacity to collect data, analyse it and develop programs; and secondly, to develop a stable cadre to carry out policy and programs regardless of political changes in the Ministry. I would strongly suggest consultative input over a limited period of time to the Health Ministry through the auspices of AID in order to help the Ministry develop the capability to do program planning, sophisticated budgeting, to develop survey techniques and teams, plan and develop a logistical supply system and medical care teams and facilities development.

The program emphasis for the country should focus primarily on ambulatory care using the community medicine approach for the delivery of ambulatory health services, beginning with maternal and child health care, and maximizing use of allied health personnel. Most of the ongoing severe medical care problems of this country, aside from those created by warfare, relate to mothers and children, who represent at least 2/3 of the population. Such a program would have to address nutritional problems, gastroenteric disease, adequate immunization, pre- and post-natal care as well as adequately attended deliveries, family planning

and lastly a program of symptomatic care relying heavily on allied health professionals.

The hospital situation is extremely variable in Phnom Penh and the outlying seven major population centers, ranging from extremely poor (K. Speu) to fairly good (Battambang). It would seem appropriate, however, to tie upgrading of the hospitals to the needs for patient care generated by the ambulatory care system as it begins to function. It would, of course, be ideal to focus on the community medicine approach relative to ambulatory care as well as hospitals, simultaneously, but limitations imposed by the availability of resources would make this impractical. Therefore hospital facilities would be at a second level of importance and then their modification would be related entirely to the ambulatory care system.

The Ministry of Health should be assisted in developing the planning as well as the institution of programs to carry out the above format.

Staffing of ambulatory care facilities and necessary back-up hospital facilities through the planned use of the voluntary agencies is a very enticing approach. If the Ministry of Health develops a capability to organize and coordinate such staffing then the population should be assured adequate coverage throughout the land. At present, volag capability tends to be clustered and uncoordinated, thereby not maximizing this resource. A definite part of such a program should be the planned gradual replacement of expatriates in such a system through the development of capable Khmer professionals. Again, this seems definitely possible provided adequate incentive is given through supplementation of income in a controlled fashion.

In the development of ambulatory care facilities it is important not only to focus on meeting acute needs but also to focus on developing a preventive stance by developing programs of nutritional support, hygienic water and waste disposal programs, immunization, natal and perinatal programs and family planning. As to those circumstances generated by warfare, the activities of the IOG have been exemplary and should be continued and expanded as the needs dictate. It is critical, however, that the Ministry of Health have a program for follow up and takeover to maintain adequate health care delivery after the emergency situation has subsided.

The United Nations agencies represent resources which have been greatly underutilized. Recent activities by UNICEF after enlargement of their program commitment to Indochina and under the excellent leadership of the current director, is adequate evidence of what is possible. The role of UNDP has remained relatively small, funding resources are not fully utilized and therefore represents a remarkably underdeveloped resource. WHO has recently accepted an operational role in addition to its traditional advisory role, but has had great difficulty in bringing about the administrative changes necessary to effectively carry out the new role. What seems to be needed is new leadership and a stepping up of activities. Hopefully the combined efforts of the Ministry of Health and AID can be marshalled to stimulate significant changes in the delivery of services, including program development by WHO and activation of UNDP.

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Hopefully the combined efforts of the Ministry of Health and AID can be marshalled to stimulate significant changes in the delivery of services, including program development by WHO and activation of UNDP.