

MISSION REPORT

**FORENSIC SURVEY OF THREE MEMORIAL SITES CONTAINING
HUMAN SKELETAL REMAINS
IN THE KINGDOM OF CAMBODIA**

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SUMMARY

Over the course of a ten-day mission in the Kingdom of Cambodia, the skeletal remains of several hundred individuals, derived from historical mass killing, were surveyed for evidence of trauma. These skeletal remains were examined *in situ* in three separate memorial sites (collections of bones for religious veneration) situated within an approximately 30 km radius from the capital city, Phnom Penh. The main results of the forensic survey include:

1. The human skeletal remains, in the sampled memorial sites, were in a moderate to advanced state of postmortem deterioration due to adverse environmental conditions and other taphonomic effects.
2. The poor preservation, lack of complete representation of the all bones of the skeleton, and postmortem fragmentation limited comprehensive physical anthropological characterization. However, most of the crania recovered from one site (Kampong Speu) revealed osteologic traits of the male sex.
3. A significant minority of the human skeletal remains revealed evidence of trauma in the form of sharp force chopping injuries of the lower extremities, and gunshot wounds of the head.

Based on interviews with key individuals involved in the mass grave mapping project (Documentation Centre of Cambodia), at least 77 memorial sites and several hundred mass graves are present throughout Cambodia. In addition, there is a governmental mandate to 'examine, restore, and maintain' the memorial sites. Furthermore, the Directors of the Tuol Sleng Prison Museum and the Documentation Centre of Cambodia have expressed an interest in preserving a collection of human skeletal remains for the purposes of historical documentation and teaching. On the basis of my findings, in the context of the interest of documenting and preserving evidence of mass killing in Cambodia, I recommend:

1. A representative sample of traumatized human skeletal remains from memorial sites be collected, characterized using standard forensic methods, preserved, stored, and curated in a facility in Cambodia, such as the Tuol Sleng Prison Museum.
2. Some proportion of the mass graves in Cambodia should be exhumed and studied using the modern methods of forensic archeology, anthropology, and pathology. This would provide important definitive medicolegal information on historical mass killing in Cambodia that can not be obtained by study of the memorial sites alone.

QUALIFICATIONS

1. My name is Michael Sven Pollanen, and my professional address is the Forensic Pathology Unit, Office of the Chief Coroner for Ontario, Ontario, Canada.
2. I am a legally qualified medical practitioner with licenses to practice medicine in Washington, D.C., and Ontario, Canada. I am currently appointed as Associate Professor of Forensic Science at the University of Toronto and a consultant in forensic pathology in the Forensic Pathology Unit of the Office of the Chief Coroner for Ontario, Canada. I was recently appointed as a Visiting Medical Examiner in the Office of the Chief Medical Examiner for the District of Columbia, U.S.A.
3. My educational qualifications include a Bachelor of Science (B.Sc., biology, University of Guelph), Doctor of Medicine (M.D., University of Toronto), a Doctor of Philosophy in Pathology (Ph.D., pathology, University of Toronto), membership in the Royal College of Pathologists by published works (MRCPPath, Royal College of Pathologists, United Kingdom), and specialist certification in forensic pathology (DMJPath, Diploma in Medical Jurisprudence in Pathology, London, United Kingdom). I am currently completing requirements for Fellowship in the Royal College of Physicians and Surgeons of Canada in Anatomical Pathology.
4. My practical experience in the forensic pathology of mass killing and terrorism includes appointment as Expert-on-Mission and Medical Examiner in the United Nation Transitional Administration in East Timor (UNTAET) and the District Court of Dili, East Timor. In East Timor, I was responsible for the exhumation and postmortem examination of human remains from extrajudicial executions during 1999, and the medicolegal investigation of three United Nation's workers that were killed in Atambua, West Timor in 2000. My experience in forensic pathology of bioterrorism includes the postmortem examination of a case of homicidal anthrax infection in Washington, D.C.

THE MISSION

1. Between March 17 and 27, 2002, I made preliminary forensic investigations in the Kingdom of Cambodia under the auspices of collaboration between the Coalition of International Justice, and the Documentation Centre of Cambodia (DC-Cam). My specific objective was to make screening forensic pathologic examinations of human skeletal remains from historical mass killing in Cambodia.
2. Coordination of various aspects of my mission, including local arrangements and transportation, was provided by DC-Cam staff (Executive Director, Mr. Youk Chhang) and Dr. Craig Etcheson (Advisor to DC-Cam, and Cambodia

scholar/specialist). Site visits and liaison with local commune authorities was facilitated by DC-Cam staff including Sin Khin, Penhg Pong Rasy, and Sok Vannak. Ms. Suzannah Linton (International Lawyer and Legal Scholar) also assisted with local arrangements and coordination.

3. Based on discussion with Mr. Chhang, and Dr. Etcheson, and a partial review of the results of the DC-Cam Mass Grave Mapping Project, it was determined that the goals of the mission could be accomplished by surveying three memorial sites containing human skeletal remains. These human skeletal remains derived from historical mass killing in Cambodia and were disinterred/exhumed in the 1980's, collected, and stored in the memorials for religious veneration. The results of the Mass Grave Mapping Project indicate that at least 77 memorial sites containing human skeletal remains are present throughout Cambodia.
4. To facilitate the survey in the allocated time (10 days), three memorial sites within a 30-50 km radius of Phnom Penh were selected for site visits. In addition to logistical considerations such as road quality, the three memorial sites were selected on the basis of previous documentation by DC-Cam. In addition, the Tuol Sleng prison museum in Phnom Penh, and the corresponding memorial site (Choung Ek) were visited, but the skeletal material was not analysed.
5. The three memorial sites that were surveyed for the preparation of this report were located in Kampong Speu, a site at the base of the Oudong temple in the Pomhea Leu District, and at the ruins of the Sang prison. In most instances, permission for the examinations was obtained from local commune representatives and observation and/or assistance with the examination was carried out by local villagers and/or monks.

CHOUNG EK MEMORIAL SITE

1. After a brief orientation at the Tuol Sleng Prison Museum in Phnom Penh, I attended the Choung Ek memorial site, which is located approximately 15 km from Phnom Penh and is situated in a rural area.
2. The site Choung Ek site is several hundred square metres in size and is characterized by a central stupa that houses human skeletal remains. Immediately northwest of the stupa is land area that contains approximately 100 open eroded pits that are reported to represent the mass graves, which contained the human skeletal remains stored in the stupa. This area of land is composed of hard soil matrix that contains firmly embedded human skeletal remains. In addition, human bones are scattered on the land surface. Most of the embedded and surface scattered bones consist of markedly weathered mid-shaft portions of femora and tibiae with taphonomic loss of epiphyseal ends, and rare petrous temporal bones.

3. The stupa is a large memorial structure that contains ten levels or stories of human skeletal remains enclosed by glass walls. Most of the bones are crania. It is not possible to determine the precise number of crania housed in the stupa since counting crania is not possible due to the height of the structure. However, the first level of the stupa (present at eye level) contains a roughly square arrangement of crania with 16 crania per row. Based on the structure of the stupa, it is estimated that the stupa contains approximately 2500 crania.
4. Although most of the bones are crania there is a smaller number of long bones, heimpelvices, and mandibles that show a spectrum of taphonomic change and are mostly markedly weathered, eroded and sunbleached.
5. The crania present at the first level of the stupa show weathering, postmortem erosion, sunbleaching, varying degree of red-orange soil staining, postmortem fragmentation, and postmortem tooth loss. There is no discernible evidence of burning or carnivore gnawing. Some of the crania are labelled with handwritten serial numbers (e.g., IK 4110, IK 443, and IK3283).
6. Some of the crania are aggregated by skeletal traits of sex and age. Some crania are grouped into the older age spectrum as indicated by cranial suture obliteration, and into a young age spectrum by incomplete eruption of the third molar. In addition, the crania are further grouped according to qualitative traits of sex. However, there appears to be considerable admixture of the majority of crania by sex and age traits.
7. Due to the configuration of the stupa, examination of the crania was mostly limited to distant visual inspection and no survey for mechanical trauma was possible.

KAMPONG SPEU MEMORIAL SITE

1. The Kampong Speu Memorial site is in Kampong Speu Provincial town, Srok Chbar Morn (District), Sankat Sereypheap (Commune), and is located about 20 km South-West of Phnom Penh. The site is adjacent to a small village with cultivated fields and a bank of a river.
2. The Memorial site is a deteriorating wooden enclosure with a roof and a centrally placed stupa that contains a terraced bed for human skeletal remains composed of three ledges that rise toward the centre of the structure. The lowest and peripheral layer has several hundred human long bones organized in a parallel array and are piled on top of each other. On the middle ledge, there are several dozen human crania, and the top ledge consists of a few human crania and a basket of deteriorated clothing.

3. The general taphonomic changes are similar to that observed in the Cheung Ek site. Very few teeth remain in the occasional mandible.
4. A skeletal survey was performed over two days and consisted of randomly selecting 100 crania for examination (day 1), and surveying the long bones for evidence of perimortem mechanical trauma (day 2).
5. The random sample of 100 crania were divided into three groups according to taphonomic fragmentation: Group 1 – Crania with relatively complete facial skeleton, Group 2 – Crania with hemifacial skeleton only, and Group 3 – Crania with calvarium or major calvarial fragment only.
6. Crania from group 1 consisted of 33 specimens. Only five of the crania had qualitative morphological indicators of female sex. Only 13 on the crania had generalized obliteration of the cranial sutures indicative of advanced age. No definitive evidence of perimortem mechanical injury was found.
7. Crania from group 2 consisted of 25 specimens. The crania had indeterminate qualitative morphological indicators of sex or had features indicative of male sex. One cranium had definitive evidence of perimortem mechanical trauma. In this specimen, there was a 2 cm long, 1 mm wide, and 1 mm deep, vertically-oriented linear incised wound on the right supraorbital ridge. The wound edges showed slight taphonomic weathering effects but were clearly demarcated from the surrounding bone.
8. Crania from group 3 consisted of 31 specimens. No definitive evidence of perimortem mechanical injury was found.
9. Thirteen (13) long bones were selected from the stupa that showed definitive evidence of perimortem mechanical trauma. In all of these bones, wounds produced by the impact of a sharp weapon were found (Table 1).

POMHEA LEU (OUDONG) MEMORIAL SITE

1. The Pomphae Leu (Oudong) Memorial site is located south of Oudong in the Phnom Sdach commune, at the base of the Oudong temple and the foot of the Ethroes Mountain. The site is in proximity to Phnom Penh and Kampong Speu province. It is situated near several market stands and is adjacent to a main road.
2. Memorial site is found within a small groove of trees and huts with thatched roofs. The Memorial structure is made from concrete, wood, and has a tiled roof. In the centre of the structure is a 2.5 x 2.5 x 1.5 m glass enclosure surrounded by chicken fire fencing. This glass enclosure houses loose human skeletal remains admixed with firm red soil matrix that contains embedded bones.

3. The skeletal remains are markedly weathered with orange-red staining, and consist of several hundred long bones (mostly femora and tibiae) and crania. The crania are mostly characterized by large calvarial fragments lacking the facial skeleton or skull base. There is marked postmortem fragmentation of the crania and long bones and many long bones lack the epiphyseal-metaphyseal ends. There is no evidence of postmortem thermal damage or carnivore gnawing.
4. The crania and a sample of the long bones were examined for evidence of perimortem mechanical trauma. Eight (8) femora showed evidence of sharp instrument trauma similar in type to that observed in the Kampong Speu site. However, the preservation of the wounds (i.e., taphonomic erosion and cortical discolouration) did not permit definitive determination regarding when the wounds were inflicted. Some of wounds had features consistent with perimortem injuries, while others could not be differentiated from postmortem wounds. Two crania had perimortem injuries not found at the Kampong Speu site; these crania are described in detail.
5. One calvarium revealed a 1 cm gunshot wound of entrance of the superior convexity of the right parietal bone, situated 4 cm anterior to the lambdoid suture and 2 cm to the right of the sagittal suture. There was marked concentric internal bevelling of the entrance wound with no radiating fractures. The qualitative morphological features indicated male sex, and there was near complete obliteration the coronal, sagittal, and lambdoid sutures consistent with the older age range.
6. Another calvarium revealed a 1 cm semi-circular gunshot wound of entrance of the right inferior parietal bone, situated 4.5 cm superior to the right squamo-parietal suture and immediately posterior to the coronal suture. There was marked internal bevelling of the entrance wound with a system of radiating linear fractures. Radiating anteriorly a linear fracture extended from the entrance wound, crossed the coronal suture and involved the posterior frontal bone. Another radiating fracture was present superiorly and extended from the entrance wound along the parietal convexity in a parallel orientation to the coronal suture. The inferior portion of the entrance wound was confluent with a 4 x 1 cm defect in the right parietal bone adjacent to the most anterior extent of the squamo-parietal suture. The qualitative morphological features indicated male sex, and there was near complete obliteration the coronal, sagittal, and lambdoid sutures consistent with the older age range.

MEMORIAL SITE AT THE RUINS OF THE SANG PRISON

1. This Memorial site is located on the border of Kandal Stung District, Kandal Province and Bati District, Takeo Province. It is across a lake from the resort at Tonle Bati in Takeo Province that contains Angkorian ruins and is near the Trapeang Sva village. The Memorial site itself is adjacent to the grounds of the Sang prison (formerly the National Education Centre of Bati) that is now characterized by deteriorating concrete foundations and scrub bush.
2. The Memorial site consists of a 3 x 3 x 3 m concrete enclosure with a firm roof and a locked iron door (painted blue). The stupa is highly stylised with a concrete edifice on the top resembling Angkorian architecture. A memorial plaque/sign is present, adjacent to the concrete enclosure.
3. The concrete enclosure contains piles of human skeletal material consisting almost entirely of long bones with approximately 50 crania on the top of the pile. The concrete enclosure contains a hornet's nest.
4. The bones were in a very poor state of preservation with most bones showing white sun-bleaching, marked weathering with postmortem bone erosion and loss. The bones had a friable and crumbly texture and many were markedly warped. The crania were markedly fragmented and consist largely of major calvarial fragments.
5. No definitive evidence of perimortem mechanical trauma was apparent.

RECOMMENDATIONS

1. *Collect, characterize, preserve and curate evidence of homicidal violence present on human skeletal remains from historical mass killing in Cambodia.*

The memorial sites scattered over Cambodia provide a repository of human skeletal evidence of homicidal violence that occurred in Cambodia's past. At the present time, the human skeletal remains are deteriorating due to current storage conditions, and thus the physical evidence of skeletal trauma will be progressively lost in subsequent years. However, based on current analysis, definitive evidence of skeletal trauma is discernible on the human skeletal remains. These remains can be collected, analysed, catalogued and curated in an appropriate facility. Discussion with Mr. Chhang of DC-Cam and a letter of intent from the Director of the Tuol Sleng Prison Museum, indicate that there is interest in preserving physical (skeletal) evidence of trauma that is currently housed in the memorial sites. In addition, this is supported by a document (titled 'Circular on the Preservation of the Victims of the Genocide Committed During the Regimen of the Democratic Kampuchae (1975-1978), and Preparation of

Anlong Veng to Become a Region for Historical Tourism) issued by the Prime Minister of Kingdom of Cambodia, Hun Sen on December 14, 2001.

Therefore, I recommend that a representative sample of skeletal evidence of trauma in the form of gunshot wounds, sharp force injuries, and other forms of mechanical violence be systematically collected from a predetermined selection of memorial sites in Cambodia and subjected to standard forensic characterization. After forensic documentation, this sample can be permanently stored in the Tuol Sleng Prison Museum, forming a definitive and reviewable physical record of homicidal violence.

2. Multi-disciplinary medicolegal analysis of mass grave(s) in Cambodia.

It is highly desirable, for both legal and historical purposes, to exhume and fully characterize a selection of mass graves in Cambodia using the standard methods of forensic archeology, anthropology, and pathology. This approach has been effectively utilized in the medicolegal characterization of mass killing in several countries, most notably in Rwanda, the Balkans, and East Timor. The scope of the medicolegal and historical data that can be obtained from the application of modern forensic methods to mass grave characterization vastly exceeds that data that can be obtained from the examination of human skeletal remains from the memorial sites in Cambodia.

The types of information that can be obtained from a comprehensive multi-disciplinary forensic examination of skeletal remains in a mass grave include characterization of the demographic profile of the individuals, collection of physical evidence (e.g., projectiles), and determination of the cause and manner of death of a proportion of individuals. In addition, modern forensic methods, in selected circumstances, may allow for definitive personal identification of a minority of the decedents.

Signed and dated in Toronto, Ontario, Canada on July 26, 2002.

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Supplementary Materials and Documents

APPENDIX 1.

Table 1. Sharp force injuries on long bones from the Kampong Provincial Town Memorial Stupa, March 2002

APPENDIX 2.

Circular on preservation of remains of the victims of the genocide committed during the regime of Democratic Kampuchae (1975-1978), and preparation of Anlong Veng to become a region for historical tourism, Royal Government of Cambodia, No. 12 s.n.n.n. [provided by DC-Cam].

APPENDIX 3.

Letter to Dr. Pollanen from Sopheara Chey, Director, Tuol Sleng Museum of Genocidal Crimes, Phnom Penh, Kingdom of Cambodia.

[PROVIDED BY DC-CAM – REPRINT OF OFFICIAL GOVERNMENT ISSUE]

**Circular on
Preservation of remains of the victims of the genocide
committed during the regime of Democratic Kampuchea (1975-1978),
and preparation of Anlong Veng to become a region for historical tourism**

Following the liberation of 7 January 1979, numerous graves were left behind throughout the entire territory of Cambodia as physical testimony of the crimes committed against the innocent Cambodian people by the genocidal Pol Pot regime. Right away, the authorities and citizens made efforts to take the remains of the victims and to preserve them carefully, some in stupas, and some in other forms of appropriate memorial. However, the government has observed that since that time these memorials have not been properly maintained.

In order to preserve the remains as evidence of these historic crimes and as the basis for remembrance and education by the Cambodian people as a whole, especially future generations, of the painful and terrible history brought about by the Democratic Kampuchea regime against the people and territory of Cambodia during the period 1975-1978, lasting 3 years, 8 months and 20 days, and especially to preserve and prepare the Anlong Veng region to become a historical museum for national and international tourists in the future, the government issue the following directives:

1. All local authorities at province and municipal level shall cooperate with relevant expert institutions in their areas to examine, restore and maintain existing memorials, and to examine and research other remaining grave sites, so that all such places may be transformed into memorials, with fences, trees and informative plaques for both citizens and tourists; the Ministry of Culture and Fine Arts and the Ministry of Tourism shall issue further technical guidelines, and shall appoint expert officials to work together with the local authorities on this issue.
2. With particular reference to the Anlong Veng region, in the district of Along Veng, Otdar Meanchey Province, which was of historic importance in the final stage of the political life of the leaders and military organization of Pol Pot's Khmer Rouge, the Ministry of Tourism shall continue to make efforts, as previously directed by the government, to cooperate with the local authorities and with all relevant ministries and institutions, especially with the Ministry of Land Management, Construction, and Urbanization, Military Region 4, the Cambodian Mine Action Center and the Documentation Center of Cambodia to eradicate mines, to prepare a sound master plan, to research document, to establish a historical museum, and to search for sources of grant in order to preserve all historical evidence and to transform Anlong Veng into a national region of historical tourism. It is absolutely prohibited to encroach on or subdivide land in an anarchic manner, or to undertake any form of construction in Anlong Veng that has an impact on this historic region without government permission,

except for construction of housing for residents of the village and commune, in accordance with the regulations of the Ministry of Land Management, Construction and Urbanization.

3. Efforts shall be made to implement the above provisions before 7 January 2002, the 23rd anniversary of the overthrow of Democratic Kampuchea. On receiving this directive, all relevant ministries and institutions and local authorities shall implement it effectively.

Phnom Penh, 14 December 2001
Prime Minister

[Signed and sealed]

Hun Sen

cc:

Ministry of the Royal Palace
General Secretariat of the Senate
General Secretariat of the National Assembly
Ministries, Secretariats of State and Institutions
Office of the Prime Minister
Offices of the Deputy Prime Ministers
Offices of Provinces and Municipalities
Archives and Records

MISSION REPORT

FORENSIC PATHOLOGY IN THE KINGDOM OF CAMBODIA

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SUMMARY

At the conclusion of a ten-day forensic survey mission in the Kingdom of Cambodia I made an assessment for the potential for an externally-funded forensic training mission to Cambodia.

The main observations, largely derived from interviews include:

1. There is no formal system of death investigation in Cambodia.
2. The physical plant infrastructure (morgue facilities), professional resources (medical doctors capable to performing forensic autopsies), and cultural considerations (opposition to autopsy) have greatly hampered the performance of medicolegal postmortem examinations in Cambodia. The legal current structure does not facilitate autopsies, even in custodial deaths.
3. There is a nucleus of medical doctors interested in acquiring training in forensic pathology, but there is limited opportunity for training and inadequate ancillary resources.
4. Despite at least one United Nations-sponsored assessment of forensic services several years ago (with recommendations for improvement) no significant change has occurred in forensic medical service in Cambodia.

My main recommendations are:

1. Basic forensic training is necessary for future development of the medicolegal system in Cambodia, both to raise awareness of the role of forensic evidence in Court, and to contribute to the development of a formal system of death investigation, such as a Coroner's system.
2. Participation in basic forensic training should be target to Judicial Police, a select group of medical doctors, and lawyers/judges.
3. An international training mission to Cambodia should be performed collaboratively with at least one of the Cambodia-based non-governmental organizations that have already initiated forensic training.
4. I concur with the recommendations made by previous forensic consultants including Dr. Pekka Saukko, Philip Beh, and Sheilah Hamilton.

THE MISSION

1. Between March 17 and 27, 2002, I made preliminary forensic investigations in the Kingdom of Cambodia under the auspices of collaboration between the Coalition of International Justice, and the Documentation Centre of Cambodia (DC-Cam). My specific objective was to make screening forensic pathologic examinations of human skeletal remains from historical mass killing in Cambodia. A secondary objective was to ascertain the status of forensic medicine in Cambodia to determine the value of a potential forensic educational mission to Cambodia.
2. Coordination of various aspects of my mission, including local arrangements and transportation, was provided by DC-Cam staff (Executive Director, Mr. Youk Chhang) and Dr. Craig Etcheson (Advisor to DC-Cam, and Cambodia scholar/specialist). Ms. Suzannah Linton (International Lawyer and Legal Scholar) also assisted with local arrangements and coordination.
3. The main sources of information were interviews with specific individuals employed in international and national agencies in Phnom Penh. These individuals included medical doctors and paramedical staff in the healthcare system and people working in non-governmental organizations dedicated to education and legal reform in Cambodia. The principal interviewees are listed below.
4. Dr. Than Thanasith, Chief of the Histopathology and Cytopathology Laboratory, Faculty of Medicine and Polyclinic, SOK SANN (telephone 012 966 232). Dr. Thanasith is a medical doctor with post-graduate training in histopathology and cytopathology in France.
5. Sok Sam Oeum (Executive Director) and Stuart Coghill (Legal Advisor), Cambodian Defender's Project, P.O. Box 921, No. 12, St. 282 Boeng Keng Kang I, Phnom Penh, Cambodia, email – cdplas@worldmail.com.kh, or samoeun_sok@hotmail.com. This organization provides legal services to defendants, and legal education to the public, legal professionals, and Human Right's activists.
6. Robert A. Bradley (Team Leader), Cambodia Criminal Justice Assistance Project, P.O. Box 1126, Phnom Penh, Cambodia, 12202, email – ccjap@bigpond.com.kh.
7. Dr. Ket Van Sith, Chief of Laboratory, National Pediatric Hospital, No. 100 Russia Rd., Phnom Penh, email – 012863746@mobitel.com.kh. Dr. Sith is a Canadian trained medical laboratory technologist who supervises a clinical laboratory.

8. In addition to the interviews, I obtained documents describing the previous two professional training missions that have been sponsored by the University of Hong Kong, and the Cambodian Defender's Project (Appendix).

RECENT HISTORY OF EXTERNAL ASSESSMENT OF FORENSIC MEDICINE IN CAMBODIA

1. In the 1990's the United Nations (UNDP) sponsored a forensic consultant to visit Cambodia to make a formal assessment of forensic medical services. Dr. Pekka Saukko of Finland made specific recommendations for improving the status of forensic medicine in Cambodia.
2. Dr. Saukko put forth the 'train the trainer' model for forensic education in Cambodia.
3. A separate educational programme was delivered by Drs. Clyde Snow (Forensic Anthropologist from the United States) and Peter Vaneis (Professor of Forensic Medicine from Scotland), but, this was specifically directed to historical Human Right's abuse rather than contemporary forensic system reform.

STRUCTURE OF FORENSIC MEDICINE IN CAMBODIA

1. There is no formal system of medicolegal death investigation in Cambodia. However, the Cambodian Defender's Project is interested in developing a Coroner's based system of death investigation.
2. Sudden and unexpected deaths are not consistently reported to the police or legal authorities, and most bodies are rapidly disposed of by the next-of-kin. Only bodies in public places, or cases that have generated popular suspicions of foul play are referred to the 'Judicial Police'.
3. The main 'death investigators' are Judicial Police who are not medically-qualified but may retain the services of a small group of medical doctors who provide forensic services on an *ad hoc* basis.
4. Complete medicolegal postmortem examinations are not performed. There is no functional morgue/autopsy room facility and there is a major cultural aversion to autopsy and cold-storage of bodies. However, there is increasing use of photography to document wounds for presentation to Court. Most medical examinations of the body are limited to external examinations with recording the presence of wounds in a statement or written report. Occasionally, other forensic experts review such reports internationally.

5. A pathologist (not forensic pathologist) who runs a private practice in pathology and was trained in France is available in the country, but has not been asked to participate in autopsies.

INTERNATIONAL FORENSIC TRAINING MISSIONS IN CAMBODIA

1. In the recent years, two high-quality international forensic medical training courses have been implemented for Cambodians.
2. The Cambodian Defender's Project (along with the Asian Human Rights Commission) sponsored a two week intensive forensic pathology training course at the University of Colombo, Sri Lanka, for six medical doctors from the Ministry of Health, two medical doctors from Ministry of Interior, a senior police officer from the Office of Technical Science of the Ministry of Interior, and three lawyers.
3. This course was followed by a workshop in Cambodia that sparked interest in developing a Coroner's system in Cambodia.
4. The Cambodian Criminal Justice Assistance Project, sponsored a separate training course for the Judicial Police that was conducted by the University of Hong Kong (Centre for Criminology and Department of Pathology). Dr. Philip Beh was the primary forensic pathology consultant. This workshop was in Cambodia and had a similar curriculum to the Sri Lankan course.
5. The two separate courses were not co-ordinated, but both were well received.

RECOMMENDATIONS

I concur with the recommendations made by previous forensic consultants including Dr. Pekka Saukko, Philip Beh, and Sheilah Hamilton.

1. Basic forensic training is necessary for future development of the medicolegal system in Cambodia, both to raise awareness of the role of forensic evidence in Court, and to contribute to the development of a formal system of death investigation, such as a Coroner's system.
2. Participation in basic forensic training should be target to Judicial Police, a select group of medical doctors, and lawyers/judges.
3. An international training mission to Cambodia should be performed collaboratively with at least one of the Cambodia-based non-governmental organizations that have already initiated forensic training.

Signed and dated in Toronto, Ontario, Canada on July 26, 2002.

Michael S. Pollanen, B.Sc., M.D., Ph.D., MRCPATH, DMJ(Path)
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Supplementary Materials and Documents

[PROVIDED BY THE CAMBODIAN DEFENDERS PROJECT]**PRESS RELEASE****FORENSIC MEDICINE IS ESSENTIAL TO PROTECT HUMAN RIGHTS**

A Workshop on Forensic Medicine last week brought Cambodia a step closer to establishing a forensic medical capability and a system for formal investigation of deaths.

Organized by the Cambodian Defenders Project, the Workshop was held at the Sunway Hotel on 8 August and attended by over sixty participants representing a cross-section of medical, judicial, legal and administrative expertise – both from Government Ministries (Health, Justice and Interior) and civil society. The principal aim of the Workshop was to introduce the concept of forensic medicine, to discuss whether Cambodia should have forensic medical facilities and a Coroner system, and how those institutions could be established. The participants were in general agreement that:

1. A Coroner system should be established;
2. The Ministry of Health should establish Judicial Medical Offices;
3. Judicial Medical Officers shall be recognized by both Ministry of Justice and Ministry of Health.

As a result of this accord, CDP further recommends:

4. Coroners should be appointed by the Ministry of Justice or the Supreme Council of the Magistracy
5. The Government should include Legal and Forensic Medicine in the curriculum of the College of Medicine;
6. Selected doctors should be sent for training in legal medicine

The Workshop was the result of an intensive two-week training course for Cambodian doctors and lawyers held in Sri Lanka. The Sri Lankan training at the University of Colombo Medical School proved to be an inspiration for the Cambodian professionals who had a first-hand opportunity to view the medico-legal systems adopted by another developing Asian country.

Under the Sri Lankan system, every sudden or suspicious death must be investigated by an Inquirer (or Coroner). Specialist forensic doctors called Judicial Medical Officers, who are also trained in legal requirements, provide expert medical reports to coroners, police, prosecutors and the courts concerning any death or injury that may involve the commission of a crime. Facilities for specialist medical examinations and post mortems are an important part of the system, but need not involve sophisticated or expensive equipment.

The availability of accurate and objective medical evidence is vital to the fair administration of justice and protection of human rights in Cambodia. A Coroner system in Cambodia would help to ensure that the true cause of deaths and

injuries are known. Accidents and natural deaths can then be distinguished from criminal acts and homicides, thus promoting the interests of justice whilst protecting the rights of both victims and accused.

The forensic training course in Sri Lanka, from 13 to 28 May, was funded by the Asian Human Rights Commission and led by Mr. Sok Sam Oeun, Executive Director of the Cambodian Defenders Project (CDP). The Cambodian team comprised six doctors from the Ministry of Health, two doctors from Ministry of Interior, a senior police officer from the Office of Technical Science of the Ministry of Interior, as well as three lawyers and one expatriate legal advisor from CDP.

For further details please contact Mr. Sok Sam Oeun:-

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**[PROVIDED BY CAMBODIAN CRIMINAL JUSTICE ASSISTANCE PROJECT –
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Death Investigation Training in Cambodia:

**A report on a workshop
for the
Ministry of Interior, Judicial Police,
Royal Government of Cambodia
conducted by the
University of Hong Kong, Centre for Criminology
on behalf of the
Cambodian Criminal Justice Assistance Project
In
May 1999**

Dr. Roderic Broadhurst, Research Fellow, Centre for Criminology in
consultation with Dr. Philip Beh and Dr. Sheilah Hamilton

DRAFT REPORT - JUNE 1999

Summary

1. The training course identified a few potential candidates for further training in forensic medicine and forensic science. Considerable variation in the ability of participants was observed. An evaluation of the effectiveness of the training would be possible only by observation of subsequent performance. Further follow-up training should target potential candidates and assess their practical ability in the field.
2. The training covered only rudimentary aspects of forensic medicine and science and was not at a level to permit controlled "Training the Trainer" dissemination. The course also did not cover the investigative and interrogative implications of forensic work. Follow-up training should focus on documentation and procedures and include practical training in these fundamentals. Specialist training should be undertaken in suitable institutions abroad.
3. It would be useful to extend the basic medico-legal training to prosecutors, courts and other relevant law enforcement agencies in order to reinforce the value of proper medico-legal death investigation. If courts are to receive proper documentation then they at least should be aware of the basic requirements.
4. In order to improve the level of support to law enforcement agents in Cambodia one option is develop a "tele-medicine" capacity which enables Khmer police and courts to consult via the fax/internet with a supportive forensic pathology department (for example Queen Mary hospital). Difficult cases could

be referred for consultation via telecommunications and appropriate advice given including "guided" autopsy and interpretation,. We believe the cost of this would be reasonable although translation and supply of the equipment would be necessary.

5. Further support via arrangements to forward forensic samples/evidence to a competent receiving laboratory could be established. Although this already occurs in some cases via laboratories in Vietnam we believe that facilities in the HKSAR may be available on an individual case by case basis or government to government agreement so long as the chain of custody and the integrity of the source can be assured. In any event the development of quality assurance methods in tandem with the development of forensic services would be essential if accredited laboratories were to be so engaged. A telecommunications support service as in [4] above could also be possible for firearms and crime scene analysis.

6. Only qualified doctors or medically trained personnel should be considered for follow-up training in autopsy. Senior Scientific Police should, however, be involved in further training in general crime scene management, interpretation of medical evidence and the collection and analysis of forensic evidence. We recommend further training be undertaken in established facilities under close supervision for at least 6-12 months although shorter periods may be possible providing follow-up was provided in situ and or via telecommunications support noted in 4 and 5 .

7. Forensic firearms examination training and equipment is a priority given the incidence of death by firearms and the frequent use of firearms in criminal activities.

8. An interim administrative order and associated police and courts procedures "manual" governing all aspects of medico-legal death investigation [especially clarifying jurisdiction over the deceased] should be developed until such time as relevant laws governing evidence and the establishment of coroners courts or equivalent occur in Cambodia.

9. Suitable infrastructure should be created including the provision of a mortuary and forensic laboratory. This facility should be shared and jointly managed with the relevant health authority given the poor level of pathology services within Cambodia. A stand alone police facility may not establish a sufficient degree of independence nor provide enough work to justify the expenditure given the shortage of resources.

Introduction

A five-day introductory workshop on medico-legal investigation was provided to officers of the Judicial Police and "Court Doctors" in May 1999. The workshop

covered introductory aspects of the medical determination of cause of death. The purpose of the course was to improve the capability of Judicial Police (Scientific and Technical Department) and "court doctors" in death investigations. The following anticipated outcomes were specified:

1. Improved determination and documentation of preliminary cause of death (Court and Offence Report documents);
2. Introduce forensic autopsy and (final) cause of death;
3. Improved application of ancillary investigation;
4. Define the role of the police (Scientific and Technical Officers) and Medical Officer in crime scene investigation; and
5. Identify potential candidates for advanced training in forensic autopsy.

A description of the course programme and list of supplementary material supplied is provided in the appendix.

Background

The situation relating to the provision of forensic pathology and ancillary scientific services in the case of police/judicial investigation remains as reported by Professor Pekka Saukko for UNDP/UNOPS in May 1996. Little has changed since Professor Saukko's visit with no autopsies [internal examination] of suspicious or undetermined deaths taking place with consequent poor determination of time, manner [and mode] of death. No suitable mortuary or laboratory or competent forensic medical assistance is available to law enforcement officers. However since this report the RGC has implemented a "Judicial Police Procedures Manual" with the assistance of CCJAP which provides basic instruction to "first officers" and investigative officers at the scene[s] of crime. The implementation of these procedures should assist in the preservation and orderly examination of crime scenes in Cambodia.

We note that Professor Saukko recommended on site "Trainer the Trainer" programmes in both forensic science and forensic medicine. We agree with this approach as a means of improving basic capability but also consider that advanced training in well established forensic pathology or a forensic laboratory is highly desirable since [for example, Queen Mary our university hospital or the HKSAR Government Laboratory] this provides a clear example and allows for the acquisition of the required skills and values essential to these services.

The author has observed the performance of municipal Scientific and Technical police at crime scenes including external examinations of the deceased. External

examinations may be undertaken but are perfunctory and rudimentary - they are most unlikely to contribute to the investigative or interrogative process. Such examinations do not comply with established procedures and are illustrative of the poor capability of Judicial Police in death investigation and documentation. A priority should be the continued training of police in the preliminary cause of death and documentation of same and secure, controlled management of forensic evidence.

Course Assessment

In respect to course outcomes an introductory workshop was clearly unlikely to significantly improve the quality of forensic services without follow-up training and the provision of essential infrastructure. There was also insufficient time to address the connection between medico-legal examination and the investigative and interrogative aspects of death inquiry. The training focused on cause of death, injuries, time of death and relevant aspects of crime scene and ancillary investigations. However an important aspect of the training was an opportunity to identify priorities and assess possible means of accelerating technology transfer in forensic science. In addition the preliminary identification of suitable candidates for further training in autopsy and forensic science was also possible. Certainly improvements in corroborative evidence are possible by adequate attention to routine established procedures and comprehensive documentation of the death investigation process. Such documentation would be particularly valuable in the preparation of reports and prosecution briefs to the courts. However, there is limited value in training police in medico-legal aspects of death investigation unless similar training is available to prosecutors and the courts.

Although the workshop demonstrated that there are a number of participants/officers who are capable of completing advanced training in autopsy and forensic science attention to basic material needs [e.g. mortuary and laboratory facilities] is essential before such training could significantly improve investigative capability. However, in respect to death scene investigation implementation of routine procedures and documentation, it is possible to greatly improve performance subject to appropriate resolution of command and control issues [especially clarification of legal authority and responsibility for jurisdiction over the deceased and crime scene].

The workshop did enable preliminary identification of suitable candidates for further training in forensic medicine and science, however, only medically qualified candidates would be accepted for practical training in autopsy at the University of Hong Kong [Queen Mary Hospital]. Given the total absence of practical training it is essential supervised practical training in a hospital pathology department for medical officers and an established forensic laboratory for scientific officers is essential. In our opinion there appear to be sufficient able personnel capable of forming a cadre of competent technical officers with the

police and medical profession. Selection of such personnel would however require competence in English and only a few participants qualify.

Infrastructure needs are as basic as the provision of secure and sterile work areas, running water, and a reliable electricity supply. These needs are essential before a basic trace evidence laboratory and mortuary can be established. Consideration should be given to shared facilities with the relevant health authority especially given the totally inadequate level of pathology services in Cambodia. A 'police facility' of this kind should be able to contribute not only to homicide investigation but also assists in the determination of death in medical cases where the cause is unknown or uncertain.

We inspected a potentially suitable facility at Monivong Hospital, Phnom Penh identified by Dr. Gloria Christie [CCJAP] and agree that this was a site worthy of consideration. The size of the facility [including a room suitable for 'cold' storage of 4-8 deceased], vehicle access, reception and relative/visitor rooms and privacy. Clearly a donor would need to be identified to refurbish and adequately equip the building and provide for the training of essential personnel to operate them.

According to the Director of WHO Cambodia [interview 17.5.99], pathology for general health services is very under-developed and autopsies are not performed in the Cambodian health services. There is also no adequate mortuary or laboratory services available to police and external examinations of the deceased are often conducted in situ or not at all. The Director of WHO expressed strong support for the development of forensic pathology and ancillary investigations because of its probable positive impact on morale and the prevalence of fatal violence. In relation to toxicological and serological investigations he suggested that support for a suitable laboratory would be more likely to succeed if it was a shared facility available for routine medical investigations as well as police related work.

Issues Raised During Training

1. Newspaper reporting and coverage: there was a clear need for strict media protocols on release of information especially photographs of crime scene and decedent and, information likely to compromise investigations. Khmer officers displayed a lack of understanding of the importance of this issue and it should continue to be addressed in any subsequent training.
2. A moodier problem was unclear legal jurisdiction over the deceased and crime scene. Unambiguous authority and responsibility over control of the crime scene(s) and deceased has not been established nor is there a clear chain of custody and adjudicative procedure relating [similar to the role of the coroner] to death provided in the laws of Cambodia.

3. There was an absence of centralized and comprehensive death reporting or investigation system upon which to base resource planning and prevention strategies. Autopsies and ancillary investigation are not routinely conducted even in the case of homicide or suspected homicide.
4. There was an absence of laboratory for trace, toxicological or serological samples and trained scientist to operate them severely restricting the role of forensic evidence in criminal investigation.
5. The absence of a secure mortuary and trained medical examiners limited the value of evidence collected from the deceased and led to unnecessary urgency in the handling of this aspect of death investigation.
6. Little support and training for forensic work in the provinces with consequently a low standard or non-existent contribution by forensic services. There was a clear need to strengthen medical committees and involve doctors and forensic officers in the investigative process.
7. The above shortfalls in infrastructure and skill contributed to an extremely low level of community support and co-operation with police death investigations. There were accounts of inter-agency conflicts and defiance of known procedures of investigation.
8. There was a total lack of suitable references or handbooks in Khmer in respect Death Investigation or forensic topics and general library facilities were non-existent.
9. There was an urgent need for other related Scientific and Technical training which included: ballistics and ordinance retrieval and identification; chemical [drug and poisons], body fluids and tissue investigations; crime scene co-operation and crime intelligence; statistical records and documentation.
10. The absence of appropriate pay and conditions conducive to the development of a competent forensic service and forensic medical support also need to be addressed, especially if investment in further training and equipment is to take place.

Conclusion

Given that the course was only a beginning Instructors considered the approach of the Khmer participants positive and constructive. Despite the absence of basic infrastructure and the low level of skill we believe the education prospects are positive. Because most deaths occur in the heavily populated around Phnom Penh some consideration should be given to concentrating efforts in these areas although resource limitations may suggest a central service may be more effective.

Although the problems faced appear insurmountable we would argue that the establishment of a support group and regular consultation combined with targeted training the situation would improve. Moreover if the investigative aspects of forensic medicine can be developed we consider that some success in the prosecution of homicide offenders will result. We see no need to rush into equipping Khmer police with laboratories and a mortuary until the procedural and documentary aspects of death investigations are performed in a routine and competent manner. Nevertheless planning for these facilities should proceed as a matter of urgency since without them the confidence and capability of joint police medical investigations would be hampered. We could imagine that in 12-24 months the absence of such facilities would seriously impair the professional development of law enforcement in Cambodia.

June 1999

Roderic Broadhurst.

APPENDIX

TITLE: AN INTRODUCTION TO POLICE AND MEDICAL DEATH INVESTIGATION

PARTICIPANTS: Ministry of Interior Medical and Scientific and Technical Officers, Court and Provincial Medical Officers, 27 persons

DATE: May 17 - 21 1999, Ministry of Interior, Phnom Penh

PRESENTERS:

Dr. Philip Beh, Associate Professor, Faculty of Medicine [Forensic Pathology];

Dr. Roderic Broadhurst, Associate Professor, Faculty of Social Science [Criminology]

Dr. Sheilah Hamilton, Forensic Focus/Adjunct Professor [Forensic Science]

PROGRAMME:

Date/Time	Activity and Topics
Monday 17 May	Opening - General Teng Savong, National Police Introduction: Role of Forensic Medicine Epidemiology of Homicide in Cambodia Overview of the medico-legal autopsy Crime scene and forensic investigation
Tuesday 18 May	Cause of Death Estimation of Time of Death Identification of Deceased Post-mortem Changes Injuries Gunshot wounds
Wednesday 19 May	Accident, Suicide or Homicide? Ancillary investigations I: Trace Evidence Sampling and Documentation Crime Scene Tools Group Problem Solving Exercise

Thursday 20 May Autopsy Procedure: (Demonstration/Video)
 Pathology/Mortuary Tools
 Case Studies - Group Exercise
 Case Analysis and Presentation

Friday 21 May Ancillary investigations II:
 Serology, laboratory services
 Contamination,
 Chain of custody and documentation
 Revision: Time of Death
 Case Discussion
 Course Feedback
 Address by General Teng Savong
 Presentation of certificates of attendance

Dinner hosted by General Teng Savong

Supplementary Materials in English

Book I

1. Introduction and Medico-Legal Death in Cambodia
2. Flow Charts: Scene Management and Corpse ID
3. Medico-legal Case Work - Di Maio and Dana 1998
4. Autopsy Reporting Diagrams
5. Standard Death Investigation Form
6. Examples of HK Autopsy Reports [Various]
7. Forensic Toxicology Guide - Di Maio and Dana 1998
8. Hamilton's - Crime Scene Investigation and the Laboratory

Book II

1. Basic Anatomy for Police Officers
2. Extracts from Vincent Di Maio 1986 "Gunshot Wounds: Practical Aspects of Firearms, Ballistics and Forensic Techniques":
 - A. Detection of Gunshot Residues
 - B. Correct Handling of Deaths From Firearms
 - C. Suicide by Firearm
 - D. Model Autopsy Report
 - E. Rifling Characteristics of Rifles and Handguns
3. Extracts from the College of American Pathologists 1998 "Autopsy:

Performance and Reporting":

- A. The Forensic Autopsy
- B. Guidelines For High Risk Cases
- C. Autopsy Technique
- D. Autopsy Photography

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POLICE – FORENSIC SERVICES WORKING PAPER

Introduction

This paper reports on and develops the forensic science services element of the Police Component of the Cambodian Criminal Justice Assistance Program (CCJAP) Phase I. It relates to the Judicial Police only.

1. Existing Situation

1.1 Personnel

The total number of police remains at around 60,000 or more for a population of around 12 million. Demobbing of armed forces personnel spilling into the various police agencies that comprise the National Police swells the police strength. While all relevant information sources advised that the police are downsizing, it is not overtly apparent. It did however feature strongly in any discussions about recruiting more female officers and in discussions about seeking special skills personnel for the judicial police.

Within the Judicial Police Department, Ministry of Interior, (MOI) there are generally six sections: Economic Police, Serious Crime Police, Minor Crime Police, Anti-Drug Police, and the Scientific & Technical (S&T) Police the last of which are the subject of this Working Paper. Across the country, S&T police number an estimated 200, with some 150 reportedly at the S&T Central Office at MOI, Phnom Penh.

1.2 Structure

While the 'form' of the national structure is repeated at provincial level, the two operate largely independently of each other due to differences in funding arrangements between central and provincial sites (See 1.3 & 2.1.7 below). The quite different funding mechanisms are unsatisfactory in that central attempts to charge provinces for services which subsequently are not provided. This is a major factor in the absence of central-provincial cooperation and understanding and the absence of an effective, coordinated forensic service at any level. A solution to this funding problem must come from MOI and will be a longer term goal.

1.3 Management and Reporting

The focus of the CCJAP Phase 1 Project Team was on the Judicial Police as a part of the larger National Police Department of Cambodia. Even though a great deal more is understood about the management and reporting structures of the National Police generally, and the judicial police particularly, the organisation structures and actual reporting relationships remain quite complex. Because of the complex and duplicitous reporting relationships in the central areas and the

Provinces, the central MOI offices have limited influence over provincial judicial police.

It follows, that the Central S&T police operate differently centrally and provincially. In Phnom Penh the S&T police appear to deal with the more serious offences with minor crime scenes attended by the Phnom Penh Municipal Police (S&T section) who have also benefited from the improved crime scene procedures and equipment provided in CCJAP Phase 1. In the provinces, all crime scene attendances where forensic services are provided, are undertaken by the provincial judicial police S&T staff. Evidence that cannot be handled effectively locally (in the province), is theoretically sent to Central S&T in Phnom Penh. Verifying this, and at what volume it occurs, has not been possible to date, with the clear exception of fingerprints which are all sent to central fingerprint archives for recording, classification and storage.

1.4 Financial Management

Disbursement of funds remains highly centralised. Wages/salaries and “technical assistance” payments are made separately. The budget works on a calendar year and each cycle (year) the salary payments are delayed for the first 1 to 2 months which was the case during the inspections of the judicial police sites at Phnom Penh, Siem Reap and Kampong Speu. The technical allowance is provided monthly for consumables and other supplies necessary to operate. For Kampong Speu it was around CR3 million (or USD\$750) per month. Centrally goods are apparently purchased on the basis of a request to a finance area within MOI, and if approved, the money is transferred directly to the supplier.

1.5 Scientific Equipment

Centrally the equipment is inadequate for the expected function, with the exception of cameras (2 x Nikon F50) and crime scene kit (“BVDA International” – Netherlands) which was of suitable standard (but perhaps not ideal) for the function. Several tools in these kits were generally under utilised, and given the local availability of many possibly suitable items with which to stock more appropriate crime scene kits, this may be preferred in Phase II. Such kits are generally well secured for safekeeping and while this is understandable it tends to limit ready access. This has led to kits in some areas (Central) being unavailable and unused. In Kampong Speu however the kits are utilised. The proper contents and use of these kits will be important in Phase II, as a key element of strengthening through re-training and inclusion of forensic Standing Operating Procedures (SOPs) into the existing operating procedures.

The Central S&T Office was established to provide major and minor crime scene services, biochemical services, fingerprint recording and archiving* services, ‘general expertise’ (forgeries, handwriting, latent fingerprints), and ballistic services. [* fingerprint archiving is fingerprint records of ten print cards taken from suspects, offenders and convicted criminals]. While the standard of crime

scene examination, recording and reporting has improved substantially, and the work within the fingerprint recording and archiving is adequate, the same could not be said for the remainder of the services listed above.

Biochemical services apparently cover blood typing, drug identification and testing, and the examination/analysis of other biological fluids from crime scenes. The equipment here is grossly inadequate as is the methodology. Drug test kits were observed to be out of date and appeared to be rarely used. Later information and a visit to the National Authority for Combatting Drugs (NACD) indicates that all drug testing should be done by the NACD laboratory.

The General Expertise area is a mixed grouping of services covering; latent or scene recovered fingerprints; questioned handwriting and other document related alterations and forgeries (including thumbprint 'signatures'); marks such as shoe, wheel/tyre, tool; and the detection of stains, etc. Some useful work is possible here but the addition of some basic and relatively inexpensive equipment would vastly improve their capabilities, with subsequent improvement in their assistance to the courts.

Ballistic services are frustrated and greatly diminished by the breakdown of the old but serviceable "Leitz" comparison microscope. Apart from this there is a workable bullet recovery tank and the skills and knowledge to undertake cartridge case and projectile (bullet) comparisons linking fired ammunition to the class of weapon, and often to the individual weapon itself. Rectification of the microscope problem would restore capacity to function and also support provincial requests for ballistics work.

A modest investment in scientific equipment is essential to the development of capacity through training, leading to the delivery of effective services. The equipment proposed is supportable by current skills (albeit with some retraining necessary). The capacity which should be achieved is that estimated to be required to meet the identified needs. What is clearly not required is the ability to perform autopsies. This issue was raised with CCJAP team members during Phase I and some external experts did deliver some quite basic training. Following this training kits (best described as suitable for field autopsy) were developed and left with the Central S&T Office. This equipment appears to be unused and is likely to remain that way. No interviews with S&T police disclosed a need for this capacity. It should also be noted that the courts in Cambodia do not require the sort of evidence gained from post mortem examinations in other jurisdictions.

1.6 Scientific Consumables

The major problem effecting sustainability of any forensic service is the absence of consumable materials. Fingerprint powder/ink, film, note-paper, chart paper, gloves, equipment lamp bulbs (microscopes), microscope slides, stains for slides, drug spot test kit replenishment, etc are the ingredients for basic forensic

testing and must be provided. There must be linkage between central and the provinces in the selection, purchase and provision of these items.

While the provincial S&T sections visited had a lesser range of materials they tended to have greater quantities than the Central Office where there were virtually no stocks. This situation reflects matters raised above concerning the dual reporting relationships of the judicial police and funding arrangements. At provincial level funds may well be made available by the provincial authorities while the Central S&T Office is dependent upon direct funding from within MOI.

In many jurisdictions, forensic consumables are controlled by a central forensic section. This enables standardisation of materials and quality control. In the Cambodian context the Central S&T Office would be the appropriate area for this function. Specific packages of consumables can be defined once the nature and frequency of crime occurrence is reasonably known. This would be useful in Phase II in providing further linkage between central and the provinces.

1.7 Corruption

There is an extensive “user pays” situation which dominates the provision of services and inter-dependent services in the current Cambodian system, both between and within Ministries. The continuing inadequate salaries and infrastructure funding drives police, and others within the justice system, to practices that border on corruption, and do not meet the needs of the system itself and the people it aims to serve. Inadequate funding forces agencies within the MOI and MOJ to charge for services within and between the two Ministries. Numerous examples of tests, examinations and reports not being provided were related to the FDS. Medical reports that were not furnished or were delayed beyond warrant periods, samples forwarded but never examined/analysed, ammunition samples unable to be processed, were commonplace. It was related to the FDS, that some evidence forwarded from provinces to the Central S&T area, would cost USD\$50 per ‘request’. That is one question/request would cost USD\$50, with each subsequent request costing an additional USD\$50.

The absence of funding to meet such charges usually results in samples not being processed. Often suspects awaiting the outcome of tests are detained in custody and warrant periods have expired. It follows that that individuals are either in custody illegally or released without justice being achieved. Both scenarios are unsatisfactory from the human rights perspective, and from the perspective of community confidence in the justice system. Forensic services as an alternative to confessional evidence, cannot meet the desired human rights objective without a base of reasonable and properly calculated funding to allow testing to occur routinely.

1.8 Summary of Existing Situation

The judicial police within the overarching National Police of Cambodia, have made significant and important improvements in the provision of forensic

services. The central (Phnom Penh) and CCJAP Phase I Provincial sites have made great progress based on the introduction of police operating procedures, and the inclusion in these of processes, guidelines and procedures relating to crime scene examination, evidence recovery and other forensic support services. This has resulted in a significant positive impact in improving observance of human rights.

The operating procedures require supplementation with linked training and methods for delivery of forensic services (deliverable in modular format). A further strengthening of these improvements will occur through consolidation within the Phase I Provinces and extension into new Phase II Provinces. The disparity of systems centrally versus provincially, continues to detract from the full impact of these forensic developments.

2. Key Constraints

2.1 Institutional

2.1.1 Political

The political environment while apparently relatively stable carries a subtle undercurrent of concern that translates into a reticence to commit too strongly to anything, whether it be a process, a program structure, or a change proposal. Individuals feel constrained by the existing unique arrangements of the coalition and structure involving “first and second officials” at each level. This system also contributes to funding in that the provincial authority will favour its own party rather than equally proportioning the distribution.

2.1.2 Relationship between Politicians & the Military

The close relationship between the Government and the large military force is a factor. Many people, including the S&T police, behave ‘carefully’ so as not to attract unwanted attention. Conducting duties without fear or favour is a difficult concept in the Cambodian context. The introduction of both operational and forensic SOP’s provides a framework to operate with minimal fear as the police will be simply complying with these requirements. This is also part of the ‘strengthening’ aspects required for Phase II.

2.1.3 Culture

The cultural aspects noted that particularly effected the scientific investigation of crimes and crime scenes, are related to the “value of women” for marriage. In cases where women have been sexually attacked the police reports and consequently the forensic evidence, omit commentary regarding any sexual elements of the crime. The rationale for this approach is to ensure that women victims will have reasonable chances of marriage in the future. There appears to be a strong cultural issue with regard to what might be described as the “mistrust of women” when exposed to situations where covert sexual relations are merely

a possibility. One example of this is policewomen working night shift. Most male police believed this would impact badly on their (the women's) chance to marry and if already married would likely damage that marriage.

2.1.4 Gender

There appears to also be a strongly held belief that males using prostitutes is "normal" but the reverse is not permissible. Such sex workers can be badly treated in a criminal sense but male police or court officials do not always see this as a 'crime'.

Women do not have the same right of access to police for complaints and therefore scientific evidence will rarely be available in such cases, thus inhibiting the efforts of S&T police in these matters.

2.1.5 Laws

The fact that Cambodian Law is a mixture of UNTAC law, SOC law and several attempts by the French to develop a "Penal Code" makes operation of the courts complex but somehow manageable. S&T police evidence appears to be readily accepted in court and the standard of forensic evidence presentation is good. The absence of more than basic scene diagrams and accompanying photos indicates some room for improvement in Phase II. These improvements would include more detail in scene diagrams to assist the courts, and the collection of linking physical evidence (at provincial level sites) for examination/analysis. Also the transfer of Phase I basic forensic skills to District level, is considered an important element of forensic capability strengthening.

2.1.6 Courts

Courts are severely restricted by the lack of judicial training of judges. While this inhibits the courts themselves in terms of proper process and fairness, it means forensic evidence is eagerly sought and seldom challenged. Interviews with Judges indicated there was an appreciation of forensic evidence and that increased evidence of this nature would be welcomed.

2.1.7 Lack of National Strategy & Planning

It was patently clear at every interview with the judicial police and the courts, that co-ordination of effort between central headquarters and the Provinces is minimal at best. There appears to be system where money for provincial offices of both the police (MOI) and the courts (MOJ) is distributed via the provincial Governors and is then allocated from there. Corruption and political affiliation also influence this process. Lack of funds at both central and Provincial levels means an 'unofficial' system of cross charging takes place with forensic examination not occurring due to lack of funds.

2.1.8 Lack of Management, Supervision & "Self-starting"

This is a significant problem but more so centrally than Provincially in regard to S&T police. There is no evident understanding or motivation toward improving

their situation through sharing resources or diluting the boundaries between the very rigid divisions that have established between the various forensic disciplines. In some provinces, where Phase I had a presence, there is some cooperative spirit and effort between the areas. This was not really evident in other provinces. Centrally there appears to be little work although samples are referred from Provinces. It seems that Phnom Penh police S&T do most crime scene work around the Capital, with the central MOI S&T group being called for 'major crime' only.

2.1.9 Corruption

Corruption is an integral part of Cambodian life and will not change in the short term. Its impact on S&T work was evident in that all equipment is held under lock and key for fear of theft and disposal. This greatly inhibits its use and in some places means such equipment or supplies are not used at all. Another aspect of concern, expressed by some judges, was that families of victims can "buy" favourable reports, especially from doctors regarding injuries, and thus pervert the course of justice with tainted outcomes.

2.1.10 Poverty

This is tied to the point above but works in the opposite direction where many people have no access to justice as they are unable to pay for police attendance, any S&T services or indeed to pay for court services as is often necessary. While poverty alleviation is an important element for Phase II and an increase in forensic science capability assists human rights, its impact on poverty is far more indirect.

2.2 Human Resource Development Procedures

2.2.1 Central Human Resource Management

There appears to be little if any MOI S&T HR management with units once formed continuing on with minimal monitoring of achievement or otherwise of their objectives. There is no annual reporting against plans there is no opportunity to measure personal development and it's contribution to the overall MOI outputs.

Extending this to MOI Central S&T linking and monitoring with provincial S&T's, there is no evidence of any such role or arrangement. The Phase I project efforts are the only record of such achievement and this is something the Cambodians will need to build on with the assistance provided in Phase II. Part of this assistance includes assessment, authorisation, and establishment of skills matrices which together provide some personal development framework.

2.2.2 Training

Project delivered training on the operating procedures and the forensic elements therein has been successful at some levels. Recent attempts to conduct training by the National Police Training Department have been criticised in relation to

delivery methods and the materials used. Introduction of elements from other programs such as the Gendarmerie, and the Japanese JICA program was confusing, and diluted the important messages regarding forensic crime scene procedures.

The approach taken to training generally in Phase II is to build training capacity within the sector. The forensic training needs will vary between the central and provincial sections. It is intended that the police adviser and counterparts at the Central S&T will determine what might be regarded as “specialist” forensic training needs to be met by a short term forensic expert. At Provincial locations the level of training required can be met by the police adviser possible supplemented by staff from the Central Office.

2.2.3 Training Needs Analysis

Interactive, adult learning environments are as important for forensic skill transfer and development as they are in general police training. Additionally, the forensic program requires assessment and authorisation of skills attainment, from mastery programs with specific competency outcomes. To date this training has been provided from a general policing base and in Phase II it needs to move to a forensic training base in order that meaningful forensic services and support are delivered.

The Workshops conducted by the FDS also revealed a need to expand forensic skill transfer down to District level, to improve response times to scenes and thereby support judicial police better across those provinces. It was recognised that at District level the service would be perhaps at a slightly lower level than that provided to date provincially. In practice, this would be achieved through the provision of crime scene kits and cameras which are less complex and expensive but still meet the requirements of professional scene examination and recording. Serious crime scenes that require the provincial level service, would be properly preserved by trained District judicial police, until attendance by the Provincial S&T personnel.

Training in the following areas is required:

Field: -Extend forensic skills training down to District level in the Phase I provinces

- Extended evidence collection in support of scene photographic record
- Increased attention on (the possibility of) fingerprint evidence
- Greater questioning of ‘witnesses’ as to real circumstances/weapon position

Office: -Greater skills in application/understanding of current and proposed equipment both at central and provincial levels

- Cross-skilling to increase resource management flexibility and assist the removal of the current artificial barriers between disciplines primarily at central level but also provincially.

It is anticipated that these packages can be delivered over short time-frames at appropriate points in the Phase II project schedule. New equipment items should be accompanied by immediate and relatively intensive training but extension areas can be accommodated as needs determine. Such flexibility being consistent with AusAID's requirements for the Phase II program.

2.2.4 Remuneration

Wages are exceptionally low and insufficient for families to survive on. Shortfalls are made up by other activities, some of which could be described as corruption but while not condoned seem essential for survival. At the start of each calendar year, there is a considerable delay in weekly pay being provided as funds distribution from central agencies takes up to 2 months to filter down to Government workers. Subsistence activities therefore take precedence over police work including the S&T staff. Low salaries are not a driver for effort or work directed initiative.

This is a key issue for RGC to address the budget structure and the central/provincial funding model that will allow consistency of operation at both levels of the S&T police.

2.3 Physical Resources

2.3.1 Buildings

The central MOI Judicial Police building while apparently fairly new is mostly unsuitable to forensic work. The S&T police had made some efforts to operate but in conditions with corridors open to the elements including dust and other debris. The standard of accommodation is not adequate. Rooms dedicated to forensic evidence examination must be sealed from the elements to preserve the integrity of the evidence hence the proposal for minor works at Central S&T.

Most rooms were also sparsely furnished and old desks are used as examination tables and laboratory benches. Provincially the Phase I areas have newer accommodation and while not at full lab standards was satisfactory for the level of work and forensic examinations they were undertaking. Any further development of their capability would need to be accompanied by improved accommodation.

2.3.2 Vehicles

Vehicles were mainly supplied through Phase I and in nearly all areas were effectively and properly utilised and were appropriate to the needs. They are an essential element of providing forensic services and essential to any proposed new provincial developments.

2.3.3 Communications

Attempts were evident at some provinces for more effective communications but most relied on locally generated power to operate, due to the (understandable)

unreliability of the Cambodian power grid. Limited communication ability limited the general effectiveness of police including S&T groups. Phase I provided communications equipment and Phase II sites will also be provided for.

2.3.4 Other Equipment

Other forensic equipment is limited with the concentration on laboratory equipment at MOI Central S&T office. This is limited and the addition of a few basic items, and repair and maintenance of existing equipment would be a vast improvement. Again responsibility for equipment, and care of it, is lacking and must be developed in Phase II as part of the specific forensic training modules and adviser support.

Crime scene kits as provided in Phase I are a substantial improvement apart from the "Autopsy Kits" which apparently were sourced from Hong Kong. The latter of these was found to be totally unused and unnecessary due to the lack of any requirement to conduct autopsies by anyone, and the total inappropriateness of S&T police to be undertaking such a role.

3. Potential for Improvement

3.1 Organisation Structure

The options for structural change are limited and rely heavily on the Cambodian authorities to act. The police structures operating in Cambodia are complex and heavily resourced due to de-mobbing of the armed forces. Significant down-sizing of MOI is occurring but this will be a medium term process over the next four years.

Linkage of central and provincial structures is also desirable so that uniform standards and procedures can be developed, which is very important for forensic services and their acceptance by the Cambodian community in displacing confessional evidence.

3.2 Procedural Development

The operating procedures developed during Phase I are an excellent starting point for the judicial police, including the S&T groups, to move forward. From these procedures and the modular forensic unit program, a set of forensic procedures can be designed, emphasising evidence recovery and provision of expert advice to the courts.

These procedures not only start the links between training, methods, laboratory practices, reporting and the establishment of essential forensic quality management systems, but also the linkage and consistency between central and provincial forensic services.

The other large task for procedural improvement is that of the funding structure between the two levels. The unavailability of money for scientific consumables at both levels undermines the sustainability of forensic support and therefore

undermines the impact the displacing of confessional evidence has, in the area of human rights.

3.3 Training

Training to date has been basic and fragmented but the start made can now be capitalised upon with clearer direction and application to the real needs of Cambodia rather than the perceived needs based on experiences in other countries with very different issues to Cambodia.

Specific forensic training modules need to be developed for integration into Phase II at appropriate stages, providing strengthening at provincial level and basic capability at **district level**. This training needs to be approached from the forensic service viewpoint as training to date has been based on police operational requirements which has not focussed strongly on scientific outcomes. Forensic science processes need to be established so that the basis of results is reliable and robust.

There is a strong need to develop forensic SOP's to compliment the operational procedures developed in Phase II. The major impact of these existing operating procedures has been wider than the Phase I provinces. They have been formally approved (as a Prakas) and adopted broadly across the country although not uniformly. Phase II can further consolidate this and add specific forensic procedures to the operating procedures. National Training and Methods Manuals (limited) can be provided, supporting linkage across the levels, and provide working information for the S&T police over and above, but complimentary to the procedures developed so far.

The approach recommended in Phase II is to strengthen Central S&T through re-commissioning their equipment, re-training and consolidation of that training through assessment/authorisation of skills transfer. Adviser support will also encourage awareness of budget implications for equipment maintenance and consumables and while some funding is included for equipment the resolution of this problem and on-going funding is a matter for the RGOC.

Strengthening of existing forensic training is preferred to extended capability training as the basic skill set commenced in Phase I is still appropriate. Extension into blood typing and similar more advanced techniques is not required and cannot be supported now or in the future without a solid base, which will need to be finalised in Phase II.

Further, drug testing is well covered by the National Authority for Combating Drugs (NACD) established with the support of the United Nations Drug Control Project (UNDCP). This facility has sterile laboratory accommodation suitable for their work and capability far beyond the S&T Police on the same site at MOI Central. It would suffice to have S&T police spot-test suspected drugs, and refer

positives to the NACD. S&T drug spot test kits are chronically out of date but this could be rectified by NACD providing refreshed spot test kits.

3.4 Information Management Systems

It is likely that linked information management systems are still some way off for Cambodia, which is not to say that local use of IT should not occur. Some success is already evident from Phase I but extension to network level is still not warranted for S&T services at this time, and the reliability of such linkages would be seriously challenged.

The Archives Section within the Central S&T Office is the area responsibility for storing and recording criminal offence reports and fingerprints. It is proposed to provide adviser support to the determination of feasibility for converting the existing hard copy manual system into a computerised system either through an “off the shelf” package or one which is built to established specifications.

4. Likely Benefits & Risks

4.1 Benefits

4.1.1 Human Rights Issues

The availability of forensic services even in the most basic form assists in the process toward improved human rights. Particularly evident in countries that have been subjected to extended periods of conflict both internally and from invading forces, is a stark absence of human rights. The value of life is low and issues (including criminal matters) are primarily resolved by quick apprehension of suspects/offenders, obtaining a ‘confession’, and meting out of summary justice often execution. Forensic evidence goes a long way in alleviating confessional evidence as the only evidence. It provides the opportunity to evaluate the inclusion or exclusion of suspects from criminal investigation without resort to violence (even torture) for confessions. The Judicial Police already appreciate the value such forensic evidence can have, not just in assisting investigations but also for presentation of the case in court. The courts have readily accepted police forensic evidence and are seeking further capabilities in this area to assist their role in deciding issues based on physical evidence more than on weighing up contrary accounts from witnesses. In Phase II it is anticipated that human rights will be even further improved by the extension of forensic capability down to District level in Phase I provinces, and development of forensic services in Phase II sites. It cannot be over-emphasised that the provision of the option to seek and present forensic supporting evidence has a significant impact improving human rights through the removal of the total reliance on ‘confessional evidence’.

4.1.2 Development of Forensic Service Ethos

Phase I has clearly demonstrated that acceptance of forensic evidence is now routine in relevant provinces and there is no reason why this ethos cannot extend

to Phase II sites. It will not be possible in the short term to extend this to all provinces unless funding for basic equipment is available and staff have access to training. The work of S&T police, although at this stage basic, is of a good quality and satisfies international standards in this area. Extension of these capabilities, in line with current Cambodian needs, will further develop the forensic ethos providing a strong basis for the judicial police to move further away from any reliance on confessional evidence. The base set in Phase I is solid and certainly capable of building on in Phase II.

4.1.3 Institutional Strengthening

The proposed design for CCJAP Phase II has a strong institutional strengthening focus. Within the forensic science activities, the design seeks to continue and extend support at provincial level accompanied by support to the Central S&T office, the designated responsible central area for forensic services. The accepted routine use of forensic evidence in all criminal investigations will strengthen the judicial police's image with the community and their role as trusted, competent, reliable investigators supporting the prosecutors and the courts in the justice process.

The need in the forensic (S&T) area now is for some specific training packages that move on from the general, broad based training available through the Project in relation to police procedures. This training has introduced the basic understanding of forensic services from a police operational point of view, but does not address forensic training needs specific to enhancing and developing greater skills in forensic investigation, examination, analysis and reporting.

This will require the next level of training from forensic experts and should be presented in the form of Methods and Training Manuals, covering the specific needs of the Cambodian justice system as it evolves over the next Phase. This does not require full time advisers but rather a series of short term, intensive training with follow up assessment at critical milestones throughout Phase II. Such training would result in the S&T areas being provided with manuals as a reference point and programs on which to train others in future.

Forensic operational procedures will need to be developed in Phase II so that the S&T areas operate according to relevant international standards and on the basis of sound processes that as far as possible guarantee the quality and reliability of the forensic evidence.

4.2 Risks

4.2.1 Technical Advisers

Technical advice in Phase II will need to include forensic service strengthening and extension from a forensic specialist viewpoint rather than the perspective of an investigator. This is not to unduly criticise the very successful efforts of the

Phase I police advisers but rather to state a change of emphasis which is necessary to maximise the forensic benefits in Phase II and for the future.

This advice will not need a constant presence in terms of a full-time adviser. Monitoring and periodic attendance from a suitable forensic specialist will ensure programs are specific and technically sound to meet the immediate needs of the Cambodian justice system at its current stage and to ensure transfer of these skills and knowledge for future development.

4.2.2 Lack of Co-ordination of Existing Improvement Programs

Difficulty has been experienced in coordinating training across Phase I Provinces and in gaining consistency between central and provincial programs. Much of the latter problem lies within the current structure of government in Cambodia where linkages between central and provincial processes are weak and variable within different Government Departments such as MOI and MOJ.

The program embarked upon by MOI in late 2000 sought to deliver training to non-project areas. The trainers were given a limited “training of trainers” program. . CCJAP Phase 1 provided excellent material to trainers for dissemination through relevant areas of the judicial police only to find that MOI then selected many junior officers as trainers. These staff lacked experience and therefore credibility, to deliver these training programs to provincial areas. It was clear to experienced field operators that these trainers had less knowledge than they did, and the program was not regarded as successful by the provincial police who participated.

This is a key element for the Phase II Training Component activities, where the overall training approach is revisited with a view to developing sustainable training capacity within the sector. It is critical that Cambodian trainers are developed to manage the ongoing training of existing and new staff in the future.

Also, for Phase II a more comprehensive, planned, inter-linked and targeted forensic training program is needed. This will require mentor training initially with transfer of skills to Cambodian trainers, for sustainability of basic forensic training into the future. The highly modular form of forensic training programs, including references, competencies, and learning outcomes will facilitate this task.

4.2.3 Ownership by RGOC

The ownership in Phase I Provinces is high and relies quite a bit on the capacity and drive of key counterparts. This is in contrast to Central MOI S& T where some staff demonstrate high ownership while others are at the opposite end of the spectrum. A contributing factor to this variable attitude is the unique situation within Phnom Penh where the local judicial police have quite a large and active S&T section. There appears to be a blurring of responsibility in relation to which group has the mandate to attend crime scenes in the Capital. Central S&T claim that they have responsibility for attending major crime scenes. While this is the

assertion, the reality appears quite different. A further complicating issue is the actual definition of what is or is not a major crime.

The role confusion discussed above coupled with equipment shortages has not provided an environment conducive to good practice.

4.2.4 Political Environment

While Cambodia appears to be enjoying a relatively stable political phase, there is still some uncertainty and a feeling of caution about committing to any program in case such programs 'fall out of favour' due to political change. Given the country's history this is not difficult to understand, but it does constitute some risk to the full success of this Project. In terms of forensic services, this risk is no greater than to any other part of the Project.

4.2.5 Economics

As discussed above, without greater financial commitment by the RGOC the effectiveness and sustainability of the Project is at risk. For the full and substantial benefits to be realised, the Cambodian Government will need to increase present budgets to ensure sustainability. Equipment both centrally and provincially must be able to be repaired, consumables must be supplied and systems for transfer of exhibits between provinces and the MOI must occur routinely. The capabilities necessarily limited to, and available at Central S&T, must be maintained and readily accessible by not only Project provinces but nationally.

The ability the RGOC to adequately fund the criminal justice system agencies is a major risk to the considerable benefits that the Project can provide, including forensic services.