

**International Health Rotation**

**Time: March 7, 1995 - May 6, 1995**

**Location: Taiyuan, Shanxi, People's Republic of China**

**Hospitals: Shanxi Maternity and Children's Hospital  
Shanxi Cardiology Research Institution  
Taiyuan Third People's Hospital**

**Student: Frank Fung**

### **Acknowledgment**

Before I begin my report, I want to thank Dr. Torjesen for his help in organizing this rotation. In addition, I want to express my appreciation to President Dong, the departmental chairs, physicians and personnel of Shanxi Maternity and Children's Hospital and Director Chien of Shanxi Medical College First Affiliated Hospital who made this rotation an educational and pleasant experience.

### **Rotations in Hospitals**

Shanxi is a mountainous province located in north-central China. This region is the origin of the Chinese Han race. Today, Shanxi is considered the largest underground museum in China. Along with artifacts, Shanxi also has tremendous reserves of coal which satisfies a major portion of the energy needs of China. It holds a median position in terms of income as compared to other provinces of China. Taiyuan is the largest of the twelve prefectural cities of Shanxi. I chose Taiyuan, Shanxi as the site of this rotation because of its limited exposure to foreign influences and because of its median standing in income compared to the rest of the country. I believed that health care in Shanxi would better exemplify the average care a Chinese citizen would receive.

Most of this seven week rotation took place in Shanxi Maternity and Children's Hospital, which is a 400 bed teaching hospital affiliated with Shanxi Medical College. It is the only hospital specializing in children's care in the province of Shanxi. It provides services in pediatric surgery and pediatric internal medicine. Pediatric internal medicine has eight departments: cardiology, intensive care, nephrology, hematology, neonatology, neurology, rehabilitation and infectious diseases.

I began my rotation in the Intensive Care Unit (ICU) under the supervision of Dr. Tong and Dr. Yau. The ICU at Shanxi Maternity and Children's Hospital consists of twenty-seven beds, and space for more patients can be provided if needed. Half of the unit is designated for newborn and infant care. Cardiac monitoring and respirator care are available. The ICU is staffed by one divisional head, two teaching faculties, two attending physicians and four residents. Unlike the Pediatric ICU in the U. S. which has limited visiting hours, the ICU in Shanxi is crowded with parents and other relatives. The parents stay in the hospital with their children and perform duties that are often relegated to nurses in the U. S. The parents are in charge of cleaning and feeding the patients, informing nurses when medications run out and calling physicians if the patient is in distress. One advantage of this system is that bonding between children and parents is not disrupted by long hospital stays. In addition, the hospital does not need to hire as many nurses when parents perform most of the care and observation. Only two to three nurses are needed for each night shift. However, the large crowd in the ICU contributes to poor air circulation and a less sanitary environment. Even though the ICU divisional chair and head nurse are aware of increased infection risks, the parents are allowed and required to stay because no resources are available to hire more nurses.

The main pathology in the ICU is bacterial pneumonia complicated with circulatory and/or respiratory failure. Offending organisms are often never identified because of limited capability for culturing microorganisms. Treatment begins with antibiotics; usually a combination of penicillin and amikacin. Antibiotics are changed if no significant improvement occurs in three days. Usual treatments for circulatory failure include the use of dopamine/dobutamine and digoxin. For respiratory failure, the preferred treatment consists of the use of oxygen, intubation if necessary and aerosolized mucolytics or steroids if appropriate. Other common diseases in the ICU include viral encephalopathy complicated by elevated intracranial pressure, newborn asphyxia and infant jaundice.

One of the most memorable patients I saw in the ICU was a five-year-old boy admitted for third degree malnutrition and persistent diarrhea for six months. At the time of admission, his weight was approximately nine kilograms. The history of his illness started about six months before admission when he was placed on erythromycin for a respiratory infection. After several doses, the patient began to have severe watery diarrhea. Although he maintained a good appetite, the patient lost weight. The patient had numerous admissions into other hospitals in Taiyuan and had numerous trials of antibiotics and other medications in attempts to stop the diarrhea. All attempts failed. Prior to this admission to the Shanxi's

Maternity and Children's Hospital, the patient was maintained on total parenteral nutrition for a period of time. It was stopped by the patient's parents secondary to pain caused by TPN to the patient. This patient's prenatal and newborn history was unremarkable. His past medical history was significant for frequent respiratory tract infections often complicated by pneumonia. The patient was the youngest of a family of five. He was the only son of a self-made entrepreneur. At the time of admission, the patient was cachectic, weak and low-spirited. The rest of his physical examination was remarkable for oral thrush and bilateral basilar crackles on lung examination. During his admission in the ICU, he had a chest x-ray suggesting bilateral congenital pulmonary cysts and his stool was positive for Candida. All antibiotics were stopped. The patient was started on fluconazole and diphenoxylate. The patient responded to the regimen with minimal weight gain and decreased frequency of diarrhea. The consistency of his stool also solidified. Throughout this admission, the parents of the patient refused TPN, so the patient did not receive any parenteral nutrition and depended on oral intake. Because the patient was improving without much IV medication and his stay was becoming a financial burden, the parents decided to take the patient home. At that time, the patient continued to have frequent bowel movements with loose stool. Three days after discharge, the parents brought the patient back with worsening mental status and diarrhea. The patient subsequently died in the ICU.

This case was a rare incident for the physicians in Taiyuan. At this day and age, they do not see children with such severe malnutrition in Shanxi. I have been taught repeatedly in school to respect the side effects of antibiotics. This patient demonstrated the value of that respect. This child had congenital pulmonary cysts, and he may have needed chronic antibiotics to prevent pneumonia. However, his antibiotic regimen should have been discontinued when he began to have diarrhea. This patient made me wonder not only about the liberal use of antibiotics in China but also about their use in the United States. The physicians in China do not have the efficient equipment and the well-trained laboratory technicians that the physicians in the US have to help them identify the offending organisms quickly. However, some physicians in the US still give patients antibiotics for upper respiratory infections most likely caused by viruses, because "patients want it." This five year old Chinese boy will make me think twice about antibiotics for the rest of my practice as a physician.

Arguments or disagreements between medical staff and patient families will rage in any hospital in the world. China is no exception. While working in the ICU, I had the opportunity to witness a medical dispute Chinese style. A patient apparently died of acute disseminated encephelomyelitis in the ICU weeks before my arrival in Taiyuan. His aunts believed that the ICU staff was responsible for the patient's death. They voiced their dissatisfaction of the staff by coming to the ICU regularly and shouting at the nurses and physicians in front of patients and their parents. At times they came with a group of supporters and the arguments often got quite heated. The security guards of the hospital would not do anything to stop them because "no physical harm was done." The dispute was resolved with a comforting fee of 8000 Yuan (about \$1000 U. S.) paid by the hospital.

I spent two weeks with the ICU staff, and then I moved on to the children's care department. Unlike the American students who came before me, I only spent one week in this department. The reason for this short rotation was that the children's care department had just returned from the country side with a complete survey of child care in the remote area. There was no plan for additional visits for a while. The children's care department is in charge of the primary care for children in the satellite clinics and ensures that good care is provided. Most of their work is done outside the city. Since they did not plan to visit the country sites while I was in Taiyuan, my experience in the department was rather uninformative. However, thanks to Director Chang, I had the opportunity to visit a clinic in a township and a cotton factory hospital. These sites are a one to two hours drive from Taiyuan. The populations at these sites are relatively affluent. These clinics are responsible for prenatal care and well child care. They have records of all pregnant women and all newborns and infants in their district. Population control is not one of their responsibilities. They ensure proper care for the mother and the child regardless of how many children the family already has. The village doctor in charge of the clinic knows all the children in the area. It is his/her responsibility to make sure that the mothers and children get their care. If the mothers and children do not show up at the clinic, he/she will go to their homes to see the mothers,

weight the babies and do simple physical examinations. If village doctors discover serious problems that the satellite clinic can not properly care for, they will refer the patients to the hospitals. The children's care department and the women's care department also send attending physicians to go to each of these clinics to provide consultations and supervise the clinic physician.

For the past three years, the Maternal Child Health Care Program has been funded as a research and pilot program with the support of both international and domestic resources. The three-year research period is about to end. This implies that some of the resources will no longer be available. Before my arrival, the children's care department collected data for the conclusion of this study. Preliminary results have shown that this program has greatly benefit the children and mothers of Shanxi. With the discontinuance of funds, the receivers of care would need to assume some of the cost if the program is to survive. It is the hope of many health care providers who have been involved in this project to see it continue to provide care for the mothers and children.

After my rotation in the children's care department, I spent ten days in the children's rehabilitation ward. The Shanxi Maternity and Children's Hospital was one of five children's hospitals which have a rehabilitation unit. The target patient populations for this unit are children with cerebral palsy (C.P.); however, patients with other neurological disability such as brachial nerve palsy are also accepted to this program. This unit is very well received for excellence in the rehabilitation of C.P. patients both domestically in China and internationally. Children from all over the country come to Taiyuan for this rehabilitation program. The therapy is provided on an inpatient basis, especially for the children from far away places. Each therapeutic course lasts one month. There are four courses in one year with two months of break in-between each course. One parent usually stays with the child during the inpatient therapy. The therapy is individualized for each child. A therapeutic goal is set at the onset of each course after a complete functional and neurological assessment. Numerous modalities of treatment are applied in this unit: acupuncture, massage therapy, Chinese medicine, Western medicine, physical therapy and electrical stimulation to acupuncture sites and muscle. According to the chairperson of this department, Dr. Dong, the acupuncture alone seems to be the most efficacious among the different modalities if each modality is applied individually. However, none of them alone can produce the efficacy of the combination of all of them together. Between November 1992, and October 1993, more than 400 patients were treated in this department; the effective therapeutic rate was approximately 85 %. It appeared that the younger the patient, the better the result. One difficulty the rehabilitation unit often faces is the non-compliance of home physical therapy when the patients go home during their two months of break. Patients often return to the unit with significant deterioration of function because parents failed to work with the children as directed. This often delays the therapeutic goal for the patient and causes frustration to the staff and parents.

One interesting but always pain provoking aspect of this combined therapy is the acupuncture. The acupuncture that we are familiar with in the U. S. is applied onto the patient's trunk or extremities. The acupuncture for C.P. is applied onto the skull. It is believed that the stimulation of certain acupuncture sites on the skull can improve certain limb functions. The sites for each function are very much accorded with the distribution of neurological function on the cerebral cortex as we know in neuro-anatomy. As anybody would imagine, ten or more one-inch long needles driven into the scalp would elicit significant pain for any person of any age. Every day every one of these children entered the special treatment room, sat on the one chair and suffered their treatment. The parents called the chair, "tiger chair." The mere sight of this simple wooden stool would elicit tears from the patients. One could hear their cries as they were carried down the hallway by their parents to the "room." By noon time, there would be about fifteen to twenty children in "the room" with needles sticking out of their head and crying as loud as they could. The cries started every twenty minute because the needles are "awakened" every twenty minute. "Awakened" means that the therapist rotates the acupuncture needles rapidly (200 round per minute) while they are still in place. This process stimulates the acupuncture sites and is the most important aspect of this therapy. Each needle is awakened three times during each session, and then the needles are removed. Often at the end of each session, a therapist would inject medication such as vitamin B12 subcutaneously on the acupuncture sites to stimulate the acupuncture sites as well. The staff is aware that

acupuncture elicits a significant amount of emotional stress to the patients. As mentioned above, acupuncture seems to be the most therapeutic among all modalities; therefore, it is considered as a necessary evil.

The rehabilitation ward was my last stop in the Children's Hospital. I subsequently moved to the adult hospital. I started with Taiyuan Third People's Hospital also known as the Infectious Diseases Hospital. In reality, this hospital is a long term facility for hepatitis B and C. The patients range from those with end stage liver disease to those with chronic persistent hepatitis. Hepatitis continues to be a severe public health problem for China. The children are immunized; however, the treatment for adults continues to be problematic. There have been some breakthroughs in using traditional and western medicine to produce symptomatic relief, for example in the treatment of jaundice. However, once patients develop end stage liver disease or cirrhosis, the hospital can not offer much. Liver transplant currently is not available in Taiyuan.

As my stay in Taiyuan Third People's Hospital ended, I was given an opportunity by Director Chien of Shanxi Medical College First Affiliated Hospital to rotate through the Cardiology Research Institution associated with the hospital. This institution is a three-story building designed for the care of cardiac patients. Similar to the cardiology ward in the US, most of the patients in this institution have either arrhythmias or coronary artery disease. This facility has the hardware to perform catheterization; however, they do not have their personnel to perform this procedure. When a catheterization is necessary, they invite a cardiologist from Beijing to perform the procedure. Very few catheterizations are performed at this time. Invasive cardiac monitoring is available; currently, one physician is trained to insert the catheter and float the balloon. The cardiologists take the procedure of invasive cardiac monitoring very seriously, almost as they would for surgical procedures. One even has to change shoes when entering a patient's room. Since the technology that we take for granted in the US is not readily available in China, the physicians in Taiyuan depend heavily on their physical examination skills. For instance, I rarely saw any physician percuss for heart borders in the U. S. In Shanxi Cardiology Research Institute, physicians must percuss for heart borders, because ultrasound and chest x-ray are located in another building and can not be easily obtained.

Shanxi Cardiology Research Institute is a tertiary hospital. Its day to day routine is similar to our teaching hospital. There are the daily rounds. There is the typical teaching hospital student to attending hierarchy. There are not as many formal teaching sessions as in American teaching hospitals. The education of a young physician in Taiyuan is very dependent on the individual. The experienced attendings are not always present to answer questions. There seems to be a great amount of passive learning in the teaching hospital which is characteristic of Asian education. However, I still found it surprising that it remains very apparent on a graduate level.

### **Review and Thoughts of Experience**

This experience in Taiyuan was very valuable to me. This spring in China gave me a new perspective on the value of life. In the Children's Hospital, parents have to pay a deposit before a sick child can be admitted. Hospitalization in China is expensive by their standards. I witnessed several occasions when very sick children were taken home or left to die in the ICU partly because of poor prognosis and partly because of financial issues. It is amazing that we spent millions of dollars a day on extremely premature infants in the U.S., while across the Pacific Ocean, an asphyxial baby girl may be left to die in the ICU. I believe that no one is to blame: not the parents, not the hospitals and not the government. When a society is going through changes, there will be victims. My soul continues to be disturbed that such differences exist across the ocean.

China's society is experiencing changes from a communist economy to a market economy. Hospitals as a part of the economy will need to change as well. Hospitals will become more and more a part of the service industry. In the US, the care providers often emphasize the idea of partnership with patient. In China, care providers have a dominant role in the doctor-patient relationship. This practice will change as the general public demands more from care providers. This change should be gradual and hopefully

will not be too problematic. However, another change in the future may lead to some growing pains. Currently, many large factories which previously existed as small communities of their own still have their hospitals and clinics for their employees. As these factories become private, they will no longer be able to afford their hospitals and will form contracts with outside hospitals. When these factory hospitals close, many health care providers will then be jobless. Many are not medical school graduates and have some additional medical training after high school. They will be obsolete and weaned out first. This may elevate the standard of care provided in China, but many care providers may no longer be able to practice their trade. One possible solution to this problem may be to geographically redistribute health care workers. In China, too many physicians work in the cities and not enough work in the rural areas. The care providers who may not be competitive in the cities would be truly appreciated in the countryside. Currently, care providers do not have sufficient financial or academic incentives to go to the villages in China. The physicians who are in the villages now are the ones without any choices. As China evolves into a developed country, the incentives may eventually present itself. Unfortunately, this process will take years. The Chinese government needs to speed up the process and provide the incentive to attract trained medical personnel to rural areas.

In summary, I greatly enjoyed my experience in Taiyuan, Shanxi, China. Everybody in Taiyuan was very friendly and eager to help outsiders. I caution anybody who plans to participate in rotations in Taiyuan that mutual respect is expected. Although President Dong of Shanxi Maternity and Children's Hospital may disagree with me, I think that the students who intend to rotate through Taiyuan should have basic working knowledge of the Chinese language and culture to make the experience worthwhile. I recommend this rotation in Taiyuan for those who are interested in health care in China, particularly children's care. I am more than happy to discuss my experience in further detail with anyone who is interested.