Community of Reflective Practice: Clinical Education in Taiwan

Yan-Di Chang

Submitted in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
under the Executive Committee
of the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2017

ABSTRACT

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Medical practice entails lifelong learning of both the science and art of medicine. However, it is not easy to teach or observe what one has learned about the latter. Previous literature has found that learning during the clinical phase is influenced by both the macro, structural issues and micro, individual factors. This ethnographic study investigates the deliberate, systematic, and sustained effort of clinical education at a district hospital in Taiwan in order to find out how medical educators can train and retain caring and competent physicians. It focuses on the students' experiences during their clerkship, formal and informal teachings such as ward rounds, teachings at the operating room, and fortnightly medical humanities discussions, as well as what the hospital has done to create a conducive environment for teaching and learning. Using a grounded theory approach, it uncovers the problems novices face in clinical practice and learning and effective techniques expert clinicians use in teaching. It concludes that the most effective and efficient education happens when learning is made explicit and visible, when teachers actively engage students in legitimate peripheral participation, when learners become self-directed in their endeavors, and when there is a community of reflective practitioners.

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Acknowledgments

First and foremost, I have to thank my advisor, Professor Hervé Varenne, for his endless support, encouragement, guidance, and assistance. I would also like to express my gratitude to: my committee members Professors Lesley Sharp, Charles Harrington, Myron Cohen, and Ray McDermott; Dr. Gary Ardan of the Office of Doctoral Studies; Bridget Bartolini, program assistant to the Anthropology Programs, and Tony Reen for helping me with my computer and other problems. I owe my fieldwork skills to Prof. Robert Sember.

I am forever grateful for the friendship of Ven. Doaseeing (Prof. Chiu-Chuan Chien), Hong-Ling Hsu, and Dr. Hsiu-Feng Tsai; their love, inspirations, and insights guided me through various crises in my life and towards the completion of this dissertation. I was very fortunate to work and learn under Dr. Chi-Wan Lai, who continues to be my mentor and whose compassion, wisdom, and humor shines like a beacon on those around him. I have to thank the National Poison Center, Taiwan for giving me a space to write my dissertation and in particular Stella Sa, Dr. Jou-Fang Deng, Dr. Chen-Chang Yang, Wan-Ling Ong, Jia-Fang Wu, Wei-Lan Chu, and Hui-Mao Chen for their assistance, support, and encouragement. Numerous others have helped and sustained me through these long years of study.

This dissertation would not be possible without the kindness and assistance extended to me by the administrators and my co-participants at SOTH, to all of whom I would love to express my gratitude individually but whom I cannot openly acknowledge. I am indebted to them and I hope I have done the hospital justice in my analysis. Any faults or mistakes in this dissertation are mine.

My education was financially supported by the following organizations or programs at various stages and I am very grateful to them: the Ministry of Education of Taiwan, the Foundation for Poison Control (Taiwan), the Fulbright Scholar Program, P.E.O. International (U.S.A.), the Tokyo Foundation and the Sasakawa Young Leaders Fellowship Fund (Japan), Columbia University's Weatherhead East Asian Institute and Institute for African Studies, and the HIV Research Trust Training Scholarship (U.K.).

Last but not least, I wish to thank my family for their unconditional and unwavering support throughout all these years: my parents Yung-Chan and Yu-Lan, my brothers Cheng-Hsian and Cheng-Yu, sister in-law Jiafang, and my husband Jen-yen Chen.

Dedication

To my parents and my beloved "kanqiu"

Introduction

十年樹木，百年樹人

It takes ten years to grow trees [but] a hundred years to cultivate people

– Chinese idiom[1]

Between 2008 and 2010, I was in charge of a program by the Ministry of Education (MOE) of Taiwan to promote and improve the teaching of medical humanities in all the medical schools in the country. We involved school administrators, faculty from various fields, including clinical medicine, basic sciences, social sciences, arts and humanities, and other disciplines such as nursing and social work, as well as students. Our ultimate goal was to produce "good" doctors who are not only competent in their medical knowledge and skills but also caring toward their patients.[2] The local word for patient (病人) is made up of the character for illness or disease (病) combined with that for a human being (人) — in other words, a sick person — and we wanted our physicians to not only treat diseases but also to heal the individual. We were pleased that the mandate from the MOE allowed us to focus on the latter aspect so that we could make our medical education program more comprehensive and holistic. However, we often encountered

[1] The saying originates from a sentence by Guan Zhong (管仲, circa 720–645 B.C.E., a politician and philosopher of the Spring and Autumn Period) which appears in his book, *Guanzi* (Writings of Master Guan).

[2] We based this aim upon the local concept that a doctor should ideally possess know-how (醫術, literally, medical skills but also including knowledge) as well as virtuous conduct (醫德, or code of ethics). Incidentally, our view was similar to that of our counterparts in the United States as noted by M. Good (1995).

doubts about whether the art of medicine could be inculcated and even among those who believed that it could, the question remained how it could be taught effectively. As a clinical practitioner, medical educator, and applied anthropologist, my interest lies in finding out how we can produce, i.e. educate and train, and retain good doctors.

There is urgency in addressing this issue because the health care profession in Taiwan is in great trouble. In March 2015, the local *Global Views Monthly* magazine published a feature entitled "A Critical Report on Health Care in Taiwan" in conjunction with the twentieth anniversary of the implementation of the National Health Insurance (NHI), our universal health care program (Peng and Lin 2015). The report was based on the results of an online survey the magazine conducted which received nearly nine thousand responses.[3] It found that 92 percent of health care professionals were pessimistic about the future development of medicine in Taiwan (among physicians, it was as high as 97 percent: with 37 percent replying "very pessimistic" and 60 percent "somewhat pessimistic") and that more than three quarters of the respondents admitted that they were dissatisfied with the general medical environment. Some time ago, observers began to notice that fewer physicians were specializing in the major fields, especially surgery and obstetrics. The phenomenon was labeled as "the emptiness of the big four", referring

[3] The survey was conducted between December 12, 2014 and January 9, 2015. Invitations to fill out the online questionnaire were sent through associations and societies of various health professions (excluding dentistry and traditional Chinese medicine) and hospitals, and a total of 8,733 effective samples were collected from doctors (20%), nurses (53%), pharmacists (16%), and others, e.g. laboratory technicians and hospital administrators.

to the four major specialties of medicine: internal medicine, surgery, obstetrics and gynecology (ob/gyn), and pediatrics, and was borrowed from a Buddhist saying.[4] The 2013 statistics from the Taiwan Medical Association (TMA)[5] showed that while it is true that more physicians were going into certain fields thought to be easier and more lucrative, such as plastic surgery and dermatology,[6] and that many specialists were leaving their own fields,[7] the problem is also about the uneven distribution of the health workforce between cities and rural areas. Within this country with a total area of thirty-six thousand square kilometers (almost fourteen thousand square miles) and a population density of 644 persons per square kilometer, nearly thirteen thousand people do not have access to a physician and more than three hundred thousand people receive inadequate health care.[8]

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[4] The phrase in Mandarin is 四大皆空, meaning that all four elements of which the world is constituted — earth, water, fire, and air — are void, i.e. completely indifferent to all worldly temptations. The phrase caught on and inspired the Control Yuan (the one of the five administrative branches of the government in charge of monitoring and auditing the other four: executive, legislative, judicial, and examination) to launch an investigation of the NHI (Jianchayuan 2011).

[5] Note that physician numbers consist of those practicing biomedicine only and do not include doctors of traditional Chinese medicine or dentists (Zhonghua Minguo Yishi Gonghui Quanguo Lianhehui 2014).

[6] The rise in percentage of the number of doctors in plastic surgery and dermatology during the past five years was 26.4 and 12.2 respectively compared to 1.6 for general surgeons and ob/gyn doctors, 4.8 for internists, and 6.5 for pediatricians. In the United States, a similar phenomenon is "the ROAD to happiness", referring to the preferred medical specialties of radiology, ophthalmology, anesthesiology, and dermatology.

[7] I recently heard that a few of my classmates in medical school had turned to aesthetic medicine after many years of clinical practice in various fields such as radiology and orthopedics. In May 2012, the chief surgical resident of the National Taiwan University Hospital caused quite a sensation by switching to cosmetic medicine. The reasons he cited for leaving were long work hours and low pay.

[8] The land area of Taiwan is slightly smaller than that of Maryland and Delaware combined but the total population is more than 23 million with a population density that is ranked seventeenth in the world. Yet within Taiwan, there are three administrative districts that have no doctors and sixteen areas that are underserved, i.e. the physician-to-population ratio is more than 1:6,000, compared to the national average of 1:554 and 1:297 in Taipei, the capital.

It is not clear when the tide of negativity and pessimism began to prevail within the medical profession of this country, nevertheless, most physicians blame the NHI program, the hospital accreditation system, and increased medical litigation for the degradation of medical practice in Taiwan. I disagree with the first point. I graduated a year before the NHI came into effect and witnessed how the system had helped patients who were critically ill and without health insurance.[9] I had an elderly patient who suddenly fell severely ill and spent a month in intensive care. Her children sold a piece of land to pay for their mother's hospital expenditures. I thought that the woman was at least fortunate to own some land because otherwise, either she would not have survived or her family would have been left in serious debt. With the NHI, the woman would have been covered and her family would only have had to pay ten or twenty percent of the total cost.[10] Nowadays, health care is reasonably affordable for most people in Taiwan.[11] Therefore, from the perspective of the patients, the national health policy is a boon. Yet, physicians resent the NHI for the loss of their professional autonomy. They feel that they have been deprived of their freedom of decision-making and become more limited in their choices of

[9] Before the National Health Insurance program was established in 1995, only those who were in civil and military service or who were employees, laborers or farmers had insurance. In addition, children did not have coverage.

[10] The rate of co-payment depends on the type of care (acute or chronic) and the length of stay.

[11] When one of my brothers had a heart condition called paroxysmal supraventricular tachycardia three years ago and underwent cardiac ablation, a procedure involving the insertion of a catheter into his heart to destroy the area that was causing rapid heart beats, he paid less than five hundred U.S. dollars (almost 14,000 New Taiwan dollars at an exchange rate of roughly USD 1:30 NT) for the four-hour procedure and a three-night stay at a medical center. The co-payment was ten percent for his particular type of case (acute care and a stay of less than thirty days). He did not have to pay additional fees since he stayed in a common (four-bed) room.

the specific medicines they can prescribe as well as their medical practice in general. Some of the blame directed at the health care system has partly to do with hospital administrations that do not remunerate their health care professionals well enough and do not recruit adequate number of staff, resulting in overwork of their employees[12] and causing these institutions to become known as "sweatshop hospitals". Even though the NHI has been lauded as one of the best health care systems in the world,[13] it is not without its faults and shortcomings and is prone to misuse and abuse by patients, medical personnel, and health care institutions alike; however, an in-depth discussion of its problems is beyond the scope of this research.

The other problem most physicians cite for the deterioration of medical practice is the hospital accreditation system. After the founding of the Joint Commission of Taiwan (JCT),[14] hospitals around the country have been evaluated since 1999, starting with district-level hospitals, then regional hospitals, and finally medical centers. However, different supervising bodies of various units in hospitals also require their own accreditations and on-site inspections, such as those in charge of fire safety and infectious control, resulting in as many as 44 accreditations of

[12] My observation is supported by other scholars, including the Dean of the Institute for Health Policy and Management of National Taiwan University (S-H. Cheng 2013) and a researcher at the Taiwan Healthcare Reform Foundation (Chiu 2010).

[13] See for example, the U.S. Public Broadcasting Service's (2008) report, "Sick Around the World", the Economist Intelligence Unit's 2000 ranking (as cited by Taiwan's former Minister of Health, Dr. Ming-Liang Lee 2012), and T-M. Cheng (2015). Note: Taiwan is not listed in the World Health Organization's ranking of the world's health systems as it is not recognized as a sovereign state by the United Nations.

[14] Formerly known as the Taiwan Joint Commission on Hospital Accreditation (TJCHA).

various types each year.[15] Moreover, rather than having administrative staff collect the information required for accreditation, hospital managements usually ask their health care personnel to prepare the enormous amounts of paperwork, which dramatically increases their workload. As a result, I personally witnessed nurses spending more time writing up their charts than caring for patients at their bedsides. The root of the problem may lie in the mentality of hospital administrators in Taiwan. Instead of viewing accreditation as a truthful assessment and opportunity for further improvement of the services and performance of the hospital, most hospital managements see accreditation as a test on which they have to receive high scores, resulting in rampant dishonest practices, such as falsifying the number of working hours of the doctors and nurses and providing the required number of staff to work in each shift only when on-site inspections were held, all in order to conform to the regulations.[16] Instead of looking at the root of the problem, which is how hospitals deal with accreditation, most physicians simply blame the accreditation system as a source of evil.

Last of all, another major reason for the degradation of medical practice in Taiwan is the mistrust the general public has of health care professionals, which is reflected in the deteriorating patient-doctor relationship and increasing medical litigation. Again, the majority of the health

[15] Quoted by the Ministry of Health and Welfare in a newspaper report in the *Apple Daily* (Qiu 2013).

[16] For example, see reports by *The Journalist* weekly magazine (Lin 2012; Zhang 2013).

profession blames the NHI for spoiling the public with its cheap and convenient services and encouraging patients to abuse the system even more. Scholars, however, believe that the main cause of the problem is the mentality within the country that views health care as an act of consumption and not a service.[17] All in all, these myriad but interlocking factors contribute to the increasing sense of negativity and pessimism within the health care profession, and some physicians in teaching hospitals choose to voice their frustrations to their students and those on their team who are their captive audience.

As a result of these influences stemming from the general environment of health care in Taiwan as well as their teachers and senior classmates, medical students in Taiwan feel an overwhelming sense of disappointment and bleakness about their future. I received this impression through the postings of some medical students on a major online social network and from an informal gathering with six students who were about to graduate from three different medical schools in June 2012. These latter were student leaders I had known through my previous job, and also in attendance was my ex-boss, Dr. Chi-Wan Lai, as well as two clinician-teachers who were members of our group. The concerns and worries the students expressed that day about current medical practice in Taiwan and the profession upon which they would be embarking, specifically, the increasing number of litigations and the physical violence

[17] Medical services were included in the Consumer Protection Act that was passed in 1994, despite intense lobbying by the health profession against it.

to which physicians have been subjected, the long hours of work, and the low reimbursement by the NHI, were not new to us, but what was disconcerting was the very early stage in their careers of these young people and the negative outlook they already had about their future. One bright young man confessed to us that even though he wanted to be a surgeon, he did not dare go into this field after learning that all the surgeons except the chief of a department in their teaching hospital were either divorced or on bad terms with their spouses. Many of their senior classmates had advised them to choose easy specialties such as those pertaining to the sensory organs: ophthalmology, otorhinolaryngology, and dermatology; or else to pursue aesthetic medicine.[18] It has been four years since the meeting and the men have completed their compulsory military service and undergone the one-year postgraduate training. Only one of them is doing his residency in internal medicine, another in dermatology while aiming to enter into aesthetic medicine later, yet another is planning to work in Singapore, while the last who was interested in surgery decided to delay his residency training in order to be involved in civic activities after the Sunflower Student Movement of 2014.[19] He earns his living by moonlighting at a clinic and

[18] In Taiwan, aesthetic medicine is not considered a medical specialty as it does not promote the quality of medical care and, as such, is not regulated by the Ministry of Health and Welfare. Moreover, there are at present no laws that specify its scope of practices and the specialties of the physicians involved. Hence many cosmetic techniques may be performed by any doctor with a general license, such as laser treatments, chemical peels, and injections, while more invasive procedures are done by dermatologists or plastic surgeons.

[19] The Sunflower Movement was initiated as a protest by student groups against the undemocratic process whereby the Cross-Strait Services Trade Agreement was passed by the ruling party, the Kuomintang (KMT or Chinese Nationalist Party), in the legislature. These groups occupied the Legislative Chamber between March 18 and April 10, 2014 and the Executive Bureau briefly from March 23 to 24, while thousands of people demonstrated their support by surrounding the streets around the legislature to protect the students from being evicted by riot police.

treating patients at a prison on a volunteer basis. I was quite surprised by the demoralized attitude of the students that day but also curious about how this came to be. The issues and problems the students raised highlighted the importance of also addressing the issue of retention of personnel.

In this ethnographic study, I investigated the deliberate, systematic, and sustained effort in clinical education at a district hospital in Taiwan to find out how medical educators can train and retain caring and competent physicians. I focused on the students' clerkship experiences, formal and informal teachings, and how the hospital creates a conducive environment for teaching and learning. Using a grounded theory approach, I uncovered problems novices face in clinical practice and learning, and effective techniques expert clinicians use in teaching. I concluded that the most effective and efficient education happens when learning is made explicit and visible, when teachers actively engage students in legitimate peripheral participation, when learners become self-directed in their endeavors, and when there is a community of reflective practitioners. I believe that it may be possible to retain physicians in their profession longer by teaching them to derive a sense of accomplishment and pleasure from their work.

Brief History of Taiwan's Health Care System

Taiwan is an island nation off the southeastern coast of China which consists of a main body of land and several much smaller isles between Japan and the Philippines. The evolution of medicine in this nation follows that of its history which can be classified into four periods: (1) earliest immigration; (2) the Christian missionary era (3) the Japanese occupation; and (4) the post-World War II period. The earliest inhabitants on the island were Austronesian and currently they number around 530,000, making up 2.3 percent of the population. These indigenous peoples practiced shamanism and had knowledge of the medicinal properties of local flora. During the seventeenth century, when Han Chinese began immigrating from across the strait to Taiwan, they discovered that the lush semi-tropical lands were heavily infested with malaria and numerous other pathogens.[20] The settlers believed that people fell ill because they had somehow angered the spirits and when they succumbed to illnesses, which were often fatal, they resorted to folk remedies. They were engaged in fierce combats with aborigines over the control of land and infighting among clans and dialect groups. Due to its strategic location, the island was also a resting port for Japanese and European seafarers.[21] In 1684, it was incorporated into the territory

[20] The perils encountered by the early Chinese migrants can be sensed from a popular saying, according to which, for ten settlers, "three survived, six died, and one turned back". Even so, over a period of a century, the population of Han Chinese in Taiwan increased tenfold to 1.94 million, as tallied in the 1811 consensus (Chuang 1998).

[21] The Dutch occupied southwestern Taiwan in 1624 while the Spaniards landed in the north in 1626.

of the Qing Dynasty after a renegade army had failed to establish a kingdom here.[22] Since 1640, local officials and businessmen had contributed to building shelters to aid the poor, handicapped, and sick, and later the Chinese government was also involved in founding institutions to take care of the infirm, widow(er)s, homeless, and orphans (Chen 1997). In 1885, the governor of Taiwan Province established a hospital and nursing home for soldiers in Taipei and employed a Norwegian doctor, Dr. Hunsen, to provide free medical care for the people.

The arrival of Western missionaries ushered in a new period in Taiwan's medical history as biomedicine was introduced to its people. Between 1865 and 1895, twenty-one clergy were sent to Taiwan by the Presbyterian Church in the United Kingdom and Canada, among which eight were involved in health care (Chen 1997). Of those, Drs. James Laidlaw Maxwell, Sr., David Landsborough III, and Rev. George Leslie Mackay were pioneers who established themselves in the southwestern, central western, and northern parts of the island respectively. The missionary doctors were initially met by violent resistance from the locals, but after testimonies by patients who had been cured, were gradually accepted. They then started training local people to serve as their assistants. In 1879 the first medical training facility, the David Manson Memorial Hospital, was established in Kaohsiung.

[22] The earliest record of the island by the Chinese was in the 諸蕃誌 (*A Description of Foreign Nations* or *Records of Foreign People*, published in 1225), but the rulers had been reluctant to take control of the territory until the Kingdom of Dongning (1662–1683) was overturned.

The island of Taiwan and the Penghu archipelago (the Pescadores) were later ceded to Japan under the Treaty of Shimonoseki on May 17, 1895 when China lost the First Sino-Japanese War. The new colonizers began to establish medical facilities, train health care personnel, and focus on infectious disease control through improving sanitation and hygiene and the isolation and treatment of patients. The Imperial Japanese Taiwan Hospital was established in Taipei in 1895 and training of local doctors began in 1897.[23] Some of these physicians later became crucial figures in breaking old customs, leading the New Literary Movement and opposing the colonial power during the 1920s,[24] and mitigating opium addiction in the populace.[25]

After the war, Taiwan was recovered by China which by then had become a republic. The vacancies left by Japanese doctors and medical educators were either filled by locals or Mainlanders who arrived with Chiang Kai-Shek's army following the victory of the Chinese Communists. Mandarin Chinese replaced Japanese as the official language and medium of instruction but the structure of the health care system remained unchanged with health stations or

[23] This training program was eventually developed into the National Taiwan University College of Medicine. Altogether the Japanese trained 2,813 doctors (including 1,888 Taiwanese), they stipulated that a doctor's licence was required in order to practice and discouraged the practice of traditional Chinese medicine (Chen 1997).

[24] See the analyses by Lo (2000; 2002) on the role which physicians played in Taiwanese society during this period.

[25] According to Chen (1997), even though the Japanese banned the use of opium, they allowed those already addicted to continue smoking it, causing the number of addicts to increase (the 1900 census found their number to be 169,063, or 6.3% of the population). After local doctors protested the policy, the colonizers instituted forced abstinence in 1929 and the number of addicts decreased to around two thousand at the end of World War II.

posts at the community level, clinics, district hospitals, special hospitals such as those for tuberculosis patients, and regional hospitals going up the tiers, their numbers decreasing proportionally. The medical education system gradually shifted to follow that of the United States. With a rapidly rising population, the number of hospitals and medical schools, mostly private, also increased. Chen (1997) divided the history of medical development in Taiwan after World War II into three periods: reconstruction (1945–1970), rapid development (1971–1994), and National Health Insurance (after 1995).

The February 28 incident of 1947 and the subsequent period of White Terror exacted a heavy price on Taiwanese society in general and its intellectual elite in particular.[26] During the island-wide protests against the government in 1947, Taiwanese doctors who were leaders of the society or who served as public officers were also affected (Chen 1997). In the aftermath, the population was subjected to nearly four decades of martial law where individuals were under constant fear and threat for their lives. Politics became a taboo subject and it was not until the late 1980s when people dared to speak out against various injustices in the society *en masse*, ushering the beginning of democracy on the island.

[26] The report commissioned by the Executive Yuan estimated that the number of people killed between February 27 and May 16, 1947 was 18,000 to 28,000 (J-H. Lai 1994).

The Medical Education System in Taiwan

Despite the shortage of physicians in major specialties, fortunately (or unfortunately), there is no lack of bright young people wanting to enter medical schools,[27] mainly because it is parents who decide the field of study their children should go into and the prevalent thinking of the older generation is still that doctors are well-respected in society and earn a good income.[28] As a result, each year the country's top high school graduates vie for 1,300 spots in twelve medical schools via three main channels — the joint college entrance examination, application, or nomination by a school — whereupon, if successful, they will spend the next seven years studying to become a doctor.[29] Those who miss this opportunity have another chance after college to enroll in a five-year postgraduate program at a medical school. In the regular seven-year program, the curricula generally consist of liberal arts education in the first two years and then basic sciences during the next two years, followed by two years of clerkship and a year of internship training. Upon graduation, most young doctors will choose a field in which to

[27] One form of evidence is the practice of rich parents sending their children overseas to study medicine, because of the restricted number of places for medical students each year in Taiwan, resulting in the debate about the qualifications of foreign medical graduates which took place in 2008, particularly those who studied in former East-bloc countries such as Poland and the Czech Republic. Other favorite countries for medical studies are the Philippines and China (the latter for traditional Chinese medicine).

[28] As mentioned earlier, the mentality has been passed down from the period of Japan's colonization of Taiwan, when locals were restricted to certain areas of study and the brightest young minds would enter either law or medicine. The former became unpopular during the long period of the White Terror under the KMT's rule, so that medicine became the most popular field of study.

[29] Since September 2013, medical education in Taiwan has been shortened to six years and the internship placed after graduation, in line with most medical education programs around the world.

specialize,[30] even though they are allowed by law to practice general medicine after two years. The period of residency training varies for different specialties but most conform to a minimum of three years. In a recent study, medical students from a particular school listed reasons for their choice of specialization as, first of all, quality-of-life considerations (35.84 percent), followed by clinical interests (30.36 percent), and the risk of lawsuits (19.31 percent) (S-H. Cheng 2013).

Formal medical education in Taiwan was introduced at the end of the nineteenth century by the Japanese, who had themselves borrowed from the German system. After the Second World War, Taiwan was heavily influenced by the United States and its medical curriculum also shifted gradually.[31] This curriculum underwent numerous reforms after 1990 to include (1) more emphasis on humanities and social sciences subjects and service-learning during the first two years; (2) an integration of basic sciences and clinical medical courses; (3) adoption of various forms of small-group learning, such as problem-based and team-based learning, to encourage more discussion and self-learning; (4) improvement of clinical skills training by using models, simulators, and standardized patients prior to clerkship; (5) adoption of diverse methods of student assessment, such as objective structured clinical examination (OSCE) and the mini-clinical evaluation exercise (mini-CEX); and (6) improvement of methods of interviewing

[30] This is another legacy of the Japanese era. However, the trend has changed and according to the Taiwan Medical Association, 12.2 percent of all registered physicians in 2013 do not have a specialty, the number having increased most during the past five years (46.5 percent) (Zhonghua Minguo Yishi Gonghui Quanguo Lianhehui 2014).

[31] Actually, the medical education system in the United States was also developed from the German model at the beginning of the century (see the Flexner report 1910).

and recruiting students (Liu 2013).[32] Despite these reforms, clinical education has not changed much as most physicians are too busy with serving patients to pay attention to their teaching responsibilities, except perhaps for the adoption of new methods of clinical skills assessment of students and fulfilling the paperwork requirements of accreditation agencies for medical schools and teaching hospitals.[33] However, clerkships are more hands-on now.

Review of Literature on Clinical Education

The two seminal works on medical education appeared slightly more than half a century ago. Merton, Reader, and Kendall's (1957) study, *The Student-Physician*, investigated some of the macro issues that affect the socialization of neophyte physicians, such as curriculum, power relations between students and the faculty and administration, the learning environment and organization of the hospital, and reimbursement by different insurance systems, while Becker et al.'s *Boys in White* (1961) was an in-depth ethnography of medical students.[34] This latter work found that students had to make a choice between what was expected of them and what they wanted as students. These two publications inspired subsequent studies of various groups of

[32] Many of the initiatives followed the change of focus in American medical education from a science-based to a problem-based approach (Frenk et al. 2010).

[33] It is noteworthy that Hirsch et al. (2007) as well as others have observed that clinical education in the U.S. has not changed much despite the reforms in medical education.

[34] Even though the study by Becker and his colleagues was conducted during the late 1950s in the U.S., the situations underwent by the students were rather similar to my own experiences about four decades later in Taiwan. Again, this reflects the similarities in medical education in both countries which I had described earlier.

physicians at different stages of their careers, such as Bloom's (1973) on medical students, Mumford's (1970) on interns, and Mizrahi's (1986) on medical residents, as well as research in other countries, such as the United Kingdom (Atkinson 1981; Sinclair 1997), Israel (Shuval 1980), and Australia (Luke 2003). The majority of later scholars also followed the theoretical viewpoints of these pioneer works and either adopted a sociological/functionalist perspective which focused on historical and structural issues or an anthropological approach[35] which examined how individuals coped with the educational situation.[36]

In Colombotos' (1988) review of the sociology of medical education,[37] the author enumerated some of the traditional issues that researchers have emphasized concerning the socialization of physicians, such as cultivating a capacity for detached concern and coping with uncertainty, development of one's professional self-image, preferences for certain types of patients, choices of specialization, the place of idealism, dealing with mistakes, and development of judgment. He pointed out that there is disagreement about whether it is the school environment and the learning experience that influence students more or whether it is more

[35] Although Becker and his colleagues have been classified as sociologists, I consider their methodology, which has been classified as a symbolic interactionist approach, more anthropological in nature.

[36] Simpson and Back (1979) did not regard the two approaches as fundamentally different. They considered Merton, Reader, and Kendall's methodology as an inductive approach similar to an assimilationist or normative approach, and that of Becker et al. as a reactive or situational one because they examined motivation, identities, and commitment.

[37] Colombotos served as a guest editor for the special issue on the theme of "Continuities in the Sociology of Medical Education" for the *Journal of Health and Social Behavior*.

important to select students with the right attitudes (Bloom debates Conrad in the same issue). Drawing upon the concept of socialization to describe the process whereby a neophyte becomes a fully-qualified physician helps to emphasize that professional behavior is taught and then reproduced by practitioners. However, it does not explain variations in the degree and extent of the socialization of individual physicians. J. Cassell's (1998) study of experienced women surgeons found limitations in using socialization or feminist (e.g. gender) theories to explain the differences between her various subjects' behaviors and degree of nurturance; in the end, she adopted Bourdieu's concept of embodiment to account for individual choices and variations and to place the person in her social context. Sinclair (1997) and Luke (2003) also used Bourdieu's theories of "habitus" and dispositions in their investigation of medical students in England and Australia respectively. Nevertheless, what is missing in these works is the role of the teacher in the learning equation.

I believe that it is important for a researcher to understand both the micro and macro issues in medical education especially when one is looking at a new situation. However, from my reading of the literature, I sense that a lot has already been accomplished in terms of the structural problems. In my opinion, the problem lies not in calling for further studies in these aspects, as proposed by Colombotos (1988) for comparative analyses of various training institutions and different societies, but for the administrators to "buy-in", that is, to recognize the

problems in their system and institute the changes accordingly. My point is highlighted by Bloom's (1973) unfortunate experience in the early 1960s when he was commissioned by the President of the State University of New York Downstate Medical Center to study the tension between the faculty and students. After three years of intensive research, he produced a report but the results and recommendations were not used to inform subsequent decisions on the school's educational policy. I suspect it is the situation of "It is easier to change the location of a cemetery, than to change the school curriculum" as remarked by Woodrow Wilson (n.d.). Another major deficiency in previous literature that Colombotos pointed out is the need to expand the studies over the course of the life-cycle of the physicians. Yet, it is difficult for researchers to conduct long-term studies or multiple studies on different groups, so perhaps we need to reconsider medical education using a different perspective or approach.

A Bottom-Up Approach to Clinical Medical Education

While combing through the data from my fieldwork and comparing what is known in current literature, I found that none of the approaches adopted by previous studies in medical education adequately encompassed the scope of clinical learning or addressed some of the questions I uncovered in my fieldwork. Finally, I used the grounded theory method to look for a

framework that I could apply (Glaser and Strauss 1967),[38] and I discovered that Lave's works best describe what is going on in clinical practice (Lave and Wenger 1991; Chaiklin and Lave 1993). Lave and her colleagues rejected conventional learning theories that focus on separate individuals (i.e. learners) and various forms of knowledge acquisition or transmission because they found that learning is an essential part of our daily activities, a "way of being", and it is situated in the socio-cultural and historical contexts. Moreover, knowledge is never simply acquired but undergoes transformation. In apprenticeship situations, they found that the teacher and learners do not form a dyad relationship but rather a set of relations which they call a "community of practice" that consists of various old-timers and newcomers who mutually engage in a process they termed "legitimate peripheral participation" (Lave and Wenger 1991). Communities of practice involve relations between people and activities, and they do not necessarily have to be defined groups. The scholars emphasized that legitimate peripheral participation should be viewed in its entirety and as a dynamic concept: by legitimate, they mean ways of belonging and developing identities, while peripheral refers to the different ways of being located within the community of practice and fields of participation in terms of the degree of engagement, and the end point leads to full participation. In the hospital, various health care teams and people from different departments or professional fields may form communities of

[38] I found out later that my approach is similar to that of Light (1980).

practice where there are newcomers (e.g. medical students), relative old-timers who had been newcomers (e.g. residents), and masters (e.g. attending physicians) who co-participate and engage one another socially to produce knowledge that is mutually constituted. The degree of legitimate peripheral participation depends on how much access newcomers are given to information, resources, and opportunities.

Varenne furthered Lave's framework and adopted Cremin's definition of "education" to focus on "the deliberate, systematic, and sustained effort to transmit, evoke, or acquire knowledge, attitudes, values, skills, or sensibilities, and any learning that results from the effort, direct or indirect, intended or unintended" (Varenne 2007: 1560). It is the conscious efforts people continuously make to seek, provide, and frame knowledge, and then move on. He believes that the efforts arise out of ignorance but are also open to different activities as individuals do not accept completely what they are taught. Thus, in addition to learning, they also produce new forms of ignorance, thus generating a new cycle of educational work. Hence, besides its social and interactive characteristic, education is discursive, the work or effort is shifting in nature, and in the end, both parties may or may not be changed by the process. Varenne recommends looking at moments when people discover about certain facts of their lives and when others remind them or enforce various aspects of the facts. This solves the issue about how to study learning in doctors throughout the whole spectrum of their profession by examining

what experienced physicians educate medical students about clinical practice and how to be a good doctor. It provides us with a window to reveal the broad picture about the structural constraints and individual learning in clinical practice.

Methodology

My main research question was how medical educators can train and retain caring and competent physicians. I focused on the clinical phase of medical education because it is the main mode of learning for a physician during the course of his or her career. Scholars have noted the differences between university and community hospitals in terms of size, patient number and type, and organization (Kendall 1961; Mumford 1970), so I selected a district teaching hospital as my field site. I chose the hospital because its clerkship program is one of the best examples of clinical education in Taiwan, i.e. it was a purposeful sample. Irby (1992) believed that case studies by expert teachers can serve as guidelines for others. I focused on the clerkship because as Colombotos and Kirchner (1986) had found, the interplay of early socialization and professional identity affects doctors' approach to their work later on. Initially, I looked at the structural factors and individuals' encounters in the hospital, and focused on how more experienced physicians educated novices of the profession about what they have learned. Then applying Lave's framework, I looked for data on the community of practice in the entire hospital

and that within each teaching team, and the ways in which legitimate peripheral participation was carried out. Using grounded theory, I organized the data into: (1) the nature of clinical practice, problems medical students encounter, and ways in which they overcome the difficulties; (2) structural factors at the hospital level that promote learning and education; (3) good teaching methods; (4) creative solutions for clinical practice; (5) what students think about and ways in which they react to the training program.

The fieldwork was conducted from November 2011 to December 2012. I observed various batches of medical students from three schools in their clerkship and internship rotations. For the sake of convenience, I shall call my field site SOTH, short for "some other teaching hospital", the schools, PEMS, QEMS, and REMS, to stand for P-, Q-, R-medical school, and their main affiliated teaching hospitals, PATH, QATH, and RATH respectively. Because Taiwan is a very small country and in order for readers not to be able to identify the field site and subsequently, the peoples involved, I have painted a general picture of them and left out their particularities. While this approach may give readers an overall understanding of the medical education and training system in Taiwan, it conceals the uniqueness of the particular institution and individuals. Since the ultimate purpose of the dissertation is to discover a general theory of learning in medical education, I believe the data is not compromised in this aspect.

Even though SOTH is not affiliated to any medical schools in Taiwan, it had accepted seventh-year medical students for a one-month internship in internal medicine and surgery on its site for years.[39] However, it was only eight years ago when it began a clerkship training program for fifth-year medical students under the request from the senior administration of REMS medical school. For its expanded teaching purpose, SOTH established a general medical ward, appointed two physicians to be in charge of training full-time in internal medicine and surgery, assigned two senior nurses to be case managers to help with the medical training, and recruited twelve attending physicians to teach. After some trial and error, the current model is used for REMS: the hospital interviews and accepts a fixed number of students for a six-month clerkship program in internal medicine and surgery, and the students will spend the remainder of their first year clerkship at other departments in their main affiliated teaching hospital, RATH. The majority of students will first go through internal medicine before doing surgery. For the internal medicine rotation, they will be divided into two groups, each under the charge of a SOTH teaching attending physician, and they would be placed in the general medical ward. Each teaching team consists of an attending physician, a resident or two nurse practitioners, a case manager, some interns, and three clerks. The number of interns varies from zero to three each

[39] As mentioned, medical education in Taiwan begins after high school and comprises of seven years. Therefore, our seventh-year students are equivalent to the interns while our fifth-year students are equivalent to third-year medical students in the U.S.

month and they are from three different medical schools: PEMS, QEMS, and REMS. In surgery, the students will be paired up in twos and assigned to three different teaching teams in various subspecialties that consist of a surgeon, a resident, and a nurse practitioner. In both departments, the students are re-grouped at the end of each month and assigned to another teaching team. Later, SOTH accepted students from another medical school, PEMS, for their clerkship program but they did not have the luxury of selecting the students and the rotation was halved to six weeks in internal medicine and six in surgery. Patients who were admitted to the general medical ward were told of the nature of the ward and its teaching purpose, and they had to sign a consent form stating their understanding of and agreement to participate in its function. Despite this measure, a small number of patients backed out later. I witnessed one patient who was shocked by the size of the teaching team on its ward rounds and withdrew her consent the following day. The patients admitted to the teaching ward had general medical problems and unlike in other hospitals, many of them were cancer patients who were not receiving curative treatments at that time but who were admitted due to other medical issues. The reason for the higher number of cancer patients is because the hospital is quite renowned for its oncology treatment and I had anticipated beforehand that it will be a boon to my study because the students will have more life-and-death encounters and educational moments.

My data were collected by following my co-participants as they went about their daily routine at the hospital, including being on duty in the evenings or during weekends. Initially, I would observe the entire team and after a few days of familiarization, I would select a student who was more open to sharing his or her thoughts with me. After obtaining permission, I would shadow him or her for two weeks. Then I would change to the other team for the remainder of the month and start the process over. I asked the students to share with me what they were thinking and feeling at that moment. Sometimes I would select those students who had difficulties in adjusting to the environment or learning in order to obtain different data. I also noted how others interacted with my co-participants, what they said, and the resultant effect on the students. While shadowing my co-participants, I tried to find time to chat with them. I also inquired about their general backgrounds, what they did during their leisure, off hours, and while they were on duty, etc, to understand their activities outside my range of observation. In this way, I was able to augment my observations with answers from them about why they did certain actions and what they thought. Although I concentrated on a particular student in their free time, during group activities such as ward rounds or classes, I could observe the entire team and I paid attention to different particular situations and moments of ignorance, trouble or uncertainty, such as critical incidents and stressful moments. I focused on "the moments when people find out about the facts of their lives, when others remind them that these are the facts, and when people

enforce various properties of the facts" (Varenne 2007: 1572). I was given a long white coat on my first day at SOTH,[40] complete with a hospital identification card that had my photograph and that listed my name, the department I was under, Medical Research, and the duration of my fieldwork which had been approved by the hospital's Institutional Review Board. Having "Medical Research" on my identification card was very helpful to me when I needed to explain the reason of my presence to other staff, students, or patients. Since I am also a doctor, most students addressed me as their senior classmate, except for some students who had known me indirectly through my previous work and they would call me "Teacher Chang". Toward the end of my fieldwork, I interviewed those in-charge of training and teaching, the teaching attendings, and other key personnel.

I wrote down what I observed mainly in English since I was educated in both English and Mandarin Chinese and because I write faster in that language. After my co-participants had become used to my presence and after I had obtained permission from everyone on the team about it, I would audiotape certain classes and discussions for transcribing later on. The staff at SOTH was very helpful to me throughout my fieldwork and I had access to all their activities that were related to teaching, even meetings where they discussed and assessed the performance

[40] Like most hospitals in Taiwan, health professionals at SOTH put on white coats. However, only attending physicians wear long white coats while the rest, such as nutritionists, laboratory technicians, nurse practitioners, occupational therapists, pharmacists, social workers, and including residents and medical students, wear short ones.

of each student. I had decided to observe the students in their medical rotation because internal medicine is, according to Hahn (1985), the "heart" of biomedicine. My rationale is backed up by many previous studies on medical education and training that were also conducted in internal medicine (e.g. Miller 1970; Mumford 1970; Mizrahi 1986; Luke 2003). Later, I also observed how a surgeon taught after I heard many students complimented about his method of teaching. One question I constantly received from people was why I did not conduct a comparative study at another hospital. I believed that the purpose of my research was not relative but I had merely wished to describe how "education" was being carried out at SOTH. Moreover, my co-participants often told one another or shared with me how things were done at other hospitals and from their conversations and descriptions, I had an idea what the situation was elsewhere.

For the descriptions of students and their teachers in this dissertation, I used a composite of their characteristics except for a few exceptional ones. I gave them pseudonyms, omitted some of their backgrounds, and changed certain facts to protect their true identities. In reality, some of my co-participants have very interesting lives and careers, which regretfully, I cannot completely disclose for fear of making them too easily distinguishable, but I try to provide enough information for readers to obtain the broad picture and to understand my fieldwork and I apologize to my co-participants if I have not fully done them justice. To help readers better remember the people, for the senior doctors and staff, I use the first letter of their position or

clinical specialty for their family or first name, and their titles when they are used, for example, the President of the hospital is Prof. Peng, one of the teaching attendings who is a hematologist is Dr. Han, while the secretary in charge of clerkship training is Shirley. For other staff and students, I use common Western first names as some of them have adopted for the ease of my English readers and to distinguish the person's gender. Therefore, the clerks all have names that begin with "C", for example, Clara (denoting a woman) and Chris (denoting a man), while the interns are named for example, Irene (woman) and Isaac (man), and so on. Since medical students are not licensed doctors, they are addressed by their names only, while residents are usually called by their first names after their title. Please remember that these are only symbols, i.e. they are arbitrary signs that represent certain qualities or elements, and as such, they do not signify particular individuals. A list of the characters can be found at the end of this chapter in Table 1.

A problem I encountered during the writing-up period is translation of the language. Many terms in Chinese[41] do not have exact meanings in English, for example, the teachers at SOTH often liked to describe students as 主動 (pronounced *zhǔ-dòng*) and I have difficulty finding the precise word for it in English. The closest meaning I believe, is "being proactive". Therefore, I

[41] Note: the written language in China was unified a long time ago and is known as Chinese, but there are many spoken dialects in the vast country, so they are described by the ethnic group by which they are spoken, such as Cantonese Chinese or Mandarin Chinese. The latter is the "official" language in China and Taiwan these days but it is actually the dialect spoken by people in Beijing, the current capital of China.

have added some Mandarin Chinese phrases or idioms as they were spoken to retain their original meaning. Another problem I encountered is that in Chinese, there is no distinction of a person's gender in the spoken language and so sometimes it is difficult to tell if one is talking about a man or a woman. I have tried to clarify the gender of a person being referred to as much as possible during my study but some have escaped my notice. Furthermore, in the language, there is no difference in the singular or plural, and moreover, the same word can be used as a verb and a noun.

My Background and Limitations

I received my medical education in Taiwan from 1987 to 1994 at a private medical school. Because our affiliated hospital could not accommodate all the students for teaching purposes, we did our clerkships at various hospitals. I received my residency training at three hospitals in different locations and qualified as a family physician after four years.[42] After that, I worked at a medical center and its surrounding communities, taught part-time at its medical school, and was in charge of a non-governmental organization for a few years before I decided to pursue further studies. Later I took a break from my fieldwork to be involved in medical humanities education and it brought me contact with all the medical schools and an understanding of our medical

[42] The usual period of training for family medcine is three years but I began in internal medicine, switched to emergency medicine before deciding on family medicine, and took time off in between to travel abroad.

education system especially during the premed phase. I also participated in the medical education reform committee of the Medical Deans' Conference to prepare medical schools to switch to a six-year undergraduate program and in the revision of accreditation standards for medical schools with the Taiwan Medical Accreditation Council (TMAC) during that time.

My previous summer fieldwork during the first two years of my doctoral program taught me that a lot of data can be obtained through field observations and not only from interviews. Even though my own skills in this area have improved through fieldwork and teaching about it in service-learning courses, I believe the main limitation of my field research was my own inadequacy in observing what was going on. In general, my co-participants were friendly but they were very busy and sometimes I could not obtain their feedback about a certain event in time. Only one student and a resident felt rather insecure about their status and refused to allow me to observe or interview them.

Outline of Chapters

The dissertation contains three sections according to the different actors: students, teachers, and hospital. The first part contains three chapters and it looks what the students were told on their first day, the students' own initial experiences, and the nature of medical practice and clinical learning. The second part consists also of three chapters whereby I examine how some

expert teachers conduct the ward rounds, a more in-depth form of case discussion and bedside teaching, and various surgical teachings in different settings such as the outpatient clinic and operating room. The third and last part has two chapters about the hospital and its clerkship program, and a special discussion session the hospital implemented which focuses on problems students face in clinical practice.

Table 1: List of Characters in Alphabetical Order of Their Pseudonyms

Pseudonym	Title	Gender	Age*	Roles (with the letter used for the pseudonym underlined)
Carl etc[1]	--	Male	22	Clerk
Carol etc[2]	--	Female	22	Clerk
Deng	Prof.	Male	60	In-charge of debriefing, mentor
Fan	Dr.	Female	45	Family and palliative care physician, mentor
Guan	Dr.	Male	40	Gastroenterologist in-charge of teaching
Han	Dr.	Male	50	Hematologist in-charge of teaching
Hong	Dr.	Female	50	Clinical Humanities Discussion facilitator, pediatrician, mentor
Ian etc[3]	--	Male	24	Intern
Ivy etc[4]	--	Female	24	Intern
Maria	--	Female	35	Case manager of one of the medical teaching teams
Meng	Dr.	Female	50	In-charge of medical training, infectious disease specialist
Nancy	--	Female	40	Nurse practitioner
Naomi	--	Female	35	Nurse practitioner
Nellie	--	Female	35	Nurse practitioner
Nian	Prof.	Male	65	Neurologist, mentor, in-charge of Professor Rounds
Peng	Prof.	Male	70	President of SOTH
Phyllis	--	Female	35	Clinical pharmacist
Rao	Prof.	Male	70	Rheumatologist, mentor, in-charge of Professor Rounds
Ray	Dr.	Male	27	Resident, first year in internal medicine
Rick	Dr.	Male	30	Chief resident of internal medicine
Rose	Dr.	Female	27	Resident, second year in internal medicine, later chief resident
Roy	Dr.	Male	28	Resident, first year in surgery
Ruan	Dr.	Male	60	Radiologist, mentor
Shen	Dr.	Male	55	In-charge of surgical training
Shirley	--	Female	35	Secretary for clerkship training
Song	Dr.	Male	50	Surgeon in-charge of teaching, specialist in plastic surgery
Tang	Prof.	Male	70	Director of Training, CHD facilitator, mentor
Wendy	--	Female	40	Social worker

* The ages quoted here are approximate ones.

[1] Includes: Carl, Cecil, Chris, Colin, Cody, Craig, Cyril

[2] Includes: Caitlin, Carey, Carol, Carrie, Cathy, Chelsea, Claire, Clara, Cynthia

[3] Includes: Ian, Irving, Isaac, Ivan, Ives

[4] Includes: Ida, Irene, Ivy

Part I: The Students

The first section looks the initial experiences in clinical training by students. In these three chapters, we shall look at what the first few days of clinical training were like for some medical students at SOTH, particularly, what they were told and by whom, what they did, and what problems they encountered. We focus on the initial period when things are fresh to the novices to examine what happens when newcomers "intrude" upon a professional work setting and concentrate on the students' perspective to obtain a sense of their lived experiences. In the first chapter, we investigate what happens during the orientation SOTH arranges for the medical students. We look at what and how different people from the hospital tell these neophytes about their future work and study. In the second chapter, we shift the focus to that of a particular student and follow her as she goes around her various tasks in order to see the encounters from her point of view, understand what she is going through, and find out how she deals with her experiences. The third chapter analyzes some of the difficulties and issues novices of medicine encounter in clinical practice.

As mentioned in the introduction, I paid particular attention to the first day because as Mumford (1970) noted, almost every important characteristic of the hospital environment and its program could be discerned on the first day of training. From her description, one can see the

value of providing an orientation to newcomers who need to be told in detail where things are and what to do, such as where the drinking fountain is and having to "study" the charts carefully to avoid mis-prescribing. Then I focused on what the early days were like for a particular student, noting the numerous times when she was at a lost about what to do next, the problems she encountered and how she overcame them. I found that it could be quite frustrating initially for a novice as one is faced with many problems but does not have any directions but like Becker et al. (1961), I observed that students are willing to help one another. Since the bulk of responsibility of the medical student is "working up" patients (Weinholtz 1991), I also looked at how the student took medical history, performed physical examination, made differential diagnoses, and how she delivered case presentations during ward rounds. We see that clinical practice requires synthesis of patient information and medical knowledge (Oscheroff et al. 1991) and that students receive teaching and feedback from multiple sources, such as patients, interns, residents, nurses, and other health care professionals (Cooke, Irby, and O'Brien 2010). As common in neophytes, the initial focus is the symptom or disease rather than the patient (Donnelly 1986; Anspach 1988). Later I attempted to paint the picture about the nature of clinical practice in Taiwan by sorting out the various themes and issues. Besides the attention to the issue of uncertainty neophytes face in clinical practice (especially Fox 1957; 1980), not much has been written on the nature of medicine, except perhaps Kleinman (1998) and E. Cassell (2004) who looked that the sufferings

of patients. From my findings, I believe that problem of uncertainty can be mitigated for novices by not overloading their work, careful selection of patients or cases for study, and close supervision. The same can be applied to situations where students become passive, detached, or even depersonalized in clinical training, as in Fox and Lief's (1963), Foley, Smilansky, and Yonke's (1979), and Light's (1980) studies, and Konner's (1987) own experience.

Chapter One: The First Day

師父領進門，修行在個人
The master teaches the trade but the apprentice's skill is self-made
– Chinese saying

The students gathered near the reception desk in the lobby, some of them with their short white coat on, their bulky bags cramped with all sorts of paraphernalia they thought they might need for their long days ahead at the hospital: notes and forms they had received beforehand, a brand-new stethoscope, penlight, and reflex hammer — tools of their new trade — a couple of pocket handbooks for quick and easy reference, a pencil case stuffed with pens of different colors, highlighters, and other stationery, a couple of notebooks, a clipboard to write on, a water bottle to replenish fluids throughout the day, snacks that they could sneak a bite or two in case they got hungry… all recommendations from their senior classmates who had gone through the same training before. A few of them even had their mini laptop or tablet computer with them. It was easy to spot them, for beside the tell-tale short white coats, they stood awkwardly, unsure of where they should be or if they belonged there. Yet their young faces exuded a sense of eagerness, and despite the early hour — it was 7:30 in the morning — they looked fresh and alert, for this was the first day of their clinical training: the period in their medical education where

they would finally get to see patients, and they were eager to apply what they had studied hard for previously in the classrooms to use. These students from REMS medical school were beginning their clerkship at SOTH hospital and they would spend their next six months in internal medicine and surgery: two of the four pillars of medicine; the other two being obstetrics and gynecology (ob/gyn), and pediatrics. Instead of going to RATH, the principal affiliated teaching hospital of their school like most of their classmates, these students had opted to do part of their clerkship at SOTH. They had attended an introductory session given by SOTH at their school almost half a year ago, applied and undergone an interview process, and were part of the lucky eighteen to be selected for the rigorous clerkship program.

Shirley, the secretary in charge of clerkship training at SOTH, approached and welcomed the students. Some of them recognized her from the selection interview a few months ago and all of them were familiar with her name, for she was the one who had been communicating with them via electronic mail since their application process. Shirley took the students on a brief tour of the hospital, starting from the basement and going up to the administrative area where the main meeting rooms were located and also where her desk was. To the students and outsiders, SOTH looks more like a hotel: the lighting is soothing, the curved walls soften the surroundings with photographs and paintings adorning them, many areas are lined with wood or painted in pleasant pastel colors, the staff smiling in a warm and friendly manner, and most of all, there is

an absence of the antiseptic odor common in most hospitals. Moreover, unlike other hospitals, there are not big signs everywhere which announce the different places or functions and from the outside, one easily misses its name. In this chapter, we will see what the students were told previously and during their first few days by various people at the hospital.

During the brief tour, Shirley pointed out the locations of various places to the students: conference rooms where they would be having their classes and other meetings, the laundry room where they could pick up clean white coats provided by the hospital with SOTH's logo and name sewn on the breast pocket, the operators' office where they had to collect their mobile phones later on, the automated teller machines which would be their life lines during the next six months, the radiology department, the pharmacy, the outpatient clinics and emergency room, the entrance to the operating rooms and intensive care units, and most importantly, where they could get food within and outside the hospital, the latter including a 24-hour convenience store next door and cafeterias of some offices nearby in case they were tired of hospital food. Shirley was quick to add that the chief resident did not like them to wander too far away from the hospital during lunch hours because they were technically "on call" at all times during the day. She also warned them to take off their white coats before leaving the hospital. Hospital personnel, including medical students, receive discounts of ten or twenty percent at the hospital cafeteria, and they could even call in advance to order certain food, such as sandwiches, that they could

pick up and eat quickly in the wards. However, no food or drinks were allowed in carpeted areas. While Shirley wound in and out of the different sections on the lower floors, she explained how the hospital was designed to separate the work areas for the staff from those public ones. It helped orient the students a bit, though most felt as if they were in a labyrinth. Shirley ended the tour by bringing them to a conference room in the administrative area. She would leave the introduction to the wards in the upper floors to others later. There was no hurry, because the students would be spending most of their time there during their next half year at SOTH and they would get to know the upper floors well. Before continuing with the orientation, we shall look at what the students were told about their work and learning at SOTH before that and reasons why they opted to train there rather than at their own teaching hospital.

The Introductory Session and Why Students Chose SOTH

What struck me about SOTH was their emphasis on "happy learning" which I heard from the students on their first day when they talked about their learning goals and which was constantly being noted by their teachers in different ways, especially during meetings on assessments of the students' performances. I tried to find out how the hospital came up with this objective from people involved in student training but none could tell me its origin. However, I noticed that the idea was first introduced to the students during the introductory session SOTH

held at their school toward the end of their fourth year before their summer vacation and the beginning of their clerkship.[1] In my opinion, the emphasis on "happy learning" is in great contrast to the traditional Chinese concept of "hard study"[2] and hence might be the reason why some students were attracted to the program.

The introductory session was held one weekday evening in early June at REMS and it was presided by Professor Tang, SOTH's Director of Training. In it, Doctor Meng and Doctor Shen — doctors in charge of training in internal medicine and surgery at SOTH — introduced in detail their training program, beginning with Dr. Meng who focused on the structure of their clerkship such as the daily schedule, composition of teaching teams, goals and learning objectives for internal medicine, and people involved in teaching and providing support to the students. She elaborated on its contents by listing the goals and learning objectives, which mainly consists of the attitudes, knowledge, and skills the students would learn during their internal medicine rotation. Dr. Shen, on the other hand, made liberal use of stories, descriptive phrases, and metaphors to tell the students how their training at SOTH would be different from that at other hospitals and what they could expect and learn there. It was Dr. Shen who

[1] This is equivalent to the second year of a normal postgraduate medical education program in the United States. I had not attended the introductory session given to the batch of students whom I mainly observed but I did for their following group and was told by Shirley that the contents did not vary much from the previous year.

[2] The phrase is 苦讀, which is made up of the characters for "bitter/hardship" and "study". The current Mayor of Taipei City, Dr. Wen-je Ko, mentioned it during his campaign bid to emphasize that his successful entry to the best medical college in Taiwan was due to his own industry. The idea that learning is a long and arduous process can also be seen from the expression 十年寒窗, literally, ten years (in front of a) chilly window.

mentioned the ideas of "happy learning" and being a "happy doctor" toward the end of his presentation and Prof. Tang echoed Dr. Shen's point when he summarized what had been said. More than half of the current batch of students were also present to answer questions from their immediate juniors during the Question and Answer session and to share their thoughts about the training at SOTH. Some compared their experiences at SOTH and RATH, and all had high praises for the former.

I did not find out what the audience thought about the introductory session but I had asked the current batch of students why they opted for SOTH's clerkship training. Most of them replied that they preferred the hands-on care and teaching rounds at SOTH. A couple of students told me that they were less proactive, so they had deliberately placed themselves in an environment that was stricter in order that they might be motivated to learn. Some had senior classmates who had been to SOTH and highly recommended the program to them. A woman however, told me that she was very touched by Prof. Tang and Dr. Meng during the introductory session, so she applied to the program even though none of her seniors had gone to SOTH. She could not recall what was specifically said that evening but she remembered very well the deep caring attitude the teachers exuded. With the exception of fellow couples, most of the students did not consult one another before they applied to the program. A student explained that the reason was because most medical students were rather independent and tended to be loners.

The Orientation Welcome on the First Day

We return now to the orientation the medical students received on their first day at SOTH. The following is the schedule:

Table 2: Orientation Schedule for Medical Students in Internal Medicine

Time	Activity
07:30	Brief tour of hospital. Administrative matters by secretary for clerkship training
08:30	Welcome remarks by president of hospital and director of training. Administrative matters
09:30	Orientation by personnel from information technology
10:00	Orientation by library staff
10:30	Orientation by doctor in-charge of training in internal medicine
12:00	Lunch with mentors and meeting with individual mentors
14:00	Orientation by chief resident
15:00	Pre-test for clerks
16:30	To ward: orientation by case manager
17:00	End of orientation

After the brief tour of the hospital, Shirley, the secretary, dealt with administrative matters. She handed out a few things the students would need for their clerkship: a thick folder containing various information, the key to their locker, a card to enter the operating rooms for those doing their surgical rotation, and the hospital's formulary which was theirs to keep and refer to. She then collected those forms that she had sent electronically for the students to fill up beforehand: background information for the record of the personnel department, agreement to the rules and regulations on dormitory use, that for the observance of patient privacy, and declaration about

their immunization status. While doing so, Shirley reminded the students of the contents in the patient privacy agreement. Next, she went through the schedule for their orientation that day. She explained that the pre-test was given to appraise their knowledge in internal medicine and the same questions would be administered again at the end of their rotation for comparison. Shirley emphasized that its purpose was part of their assessment of the students' learning in internal medicine at SOTH and urged the students not to memorize the questions nor share them with their peers. Other orientation sessions that would be given on later dates for those in internal medicine included an introduction to writing admission and progress notes, briefing on the Clinical Humanities Discussions, and introductions to other fields such as radiology, neurology, and ophthalmology.

Shortly before 8:30 a.m., the President of SOTH arrived. Professor Peng was in his seventies and the students would later learn that like many doctors in his time, Prof. Peng had left Taiwan for the United States of America after graduating from medical school during mid-1960. There, he had to start over from internship, completed his residency, and became a tenured professor at a medical center before returning to Taiwan some twenty years ago to establish the hospital. Prof. Peng welcomed the students and introduced the basics of medical education which he described as its "four keys": (1) the selection of medical students, (2) a good learning environment, (3) mentorship or role modeling, and (4) the ability to choose one's field

later on through knowing one's preferences. About the first point, he emphasized that selection of medical students should not be solely based on their ability to study and do well in examinations,[3] but rather the right character and passion for medicine. Next, Prof. Peng shared what he thought students ought to learn at SOTH, including how to approach patients, history taking and physical examination (H&P), and how to analyze and reason — i.e. logical thinking or deduction — and to make differential diagnoses,[4] all of which were also part of the H&P. He used examples he encountered with students in the U.S. to encourage the new clerks not to belittle themselves when they approach patients and emphasized the importance of H&P as foundational skills for any physician. Finally, he wished the students that they would be happy and that they would find pleasure in asking questions and finding answers.

The Director of Training, Professor Tang, arrived as Prof. Peng was leaving for a meeting. He introduced himself as a classmate of Prof. Peng at the National Taiwan University[5] who also went to the U.S.A. upon graduation and returned more than ten years ago. Like Prof. Peng, Prof.

[3] The deep-rooted conception of standardized tests as a measure of one's knowledge and merits originated from the Imperial Examination System which began in 605 C.E. whereby people were selected for military and civil service in China. Tests were organized at different administrative levels. The civil exams were based on the classics, notably the "Four Books", and had to be written in a specific manner, gradually making them formulaic but inadequate in technical or practical expertise. National examinations are still being used in Taiwan to recruit government officers.

[4] Differential diagnosis is a systematic method in medicine of distinguishing a disorder or condition from the presenting symptoms and signs through a process of deduction and elimination.

[5] The National Taiwan University College of Medicine, established in 1897 by the Japanese, was the first and only medical school in Taiwan until the National Defense Medical Center was moved from China to Taipei in 1949 (but its function was to train health personnel for the military), and the founding of the private Kaohsiung Medical College (now University) in 1954 in southern Taiwan. Currently, there are twelve medical schools in the country.

Tang also welcomed the students on the first day of their clerkship. He warned them that they would find it difficult initially because everything was so new and they would not even know where to stand and be "roadblocks", getting into everyone's way. The students chuckled at his reference to the nickname they had coined for themselves during this period of clinical training. However, Prof. Tang was quick to inform the students of the support the hospital would provide for them, particularly the people they could seek help from: Shirley, the physicians who would be teaching them, the doctors in-charge of training in internal medicine and surgery, and himself. He told the students that he would be seeing them individually once a month to talk about their learning at SOTH. In addition, they would have mentors to advise, guide, and assist them, whom they would be meeting later that day for lunch. Prof. Tang briefly explained about the mentoring program they had at SOTH. He emphasized that the mentors would not be involved in grading the students, so the latter should feel safe to go to them with any problems, whether personal or study-related. Prof. Tang next described the purpose of the Clinical Humanities Discussions (CHD), which was to allow students to bring up "non-medical" problems and issues they had in their learning and patient care. He elaborated on the distinction between "medical" problems which the students could ask of their teachers in the wards, for example, how to treat a patient with heart failure, and "non-medical" ones whereby they could bring up during the CHDs, such

as when patients refused to let students examine them. He told the students that he would speak more about it during the orientation session on CHD later that week.

After Prof. Tang left, a colleague of Shirley's came to assist her in taking photographs of the students for their identification card. The students helped groom one another before their photographs were being taken. Like most contemporary young people in Taiwan, the students were smartly dressed and some men even had stylish haircuts. On the other hand, unlike many of their counterparts, the female students did not put on makeup. A couple of women had short, boyish-looking hairstyles. All the male clerks wore shirts with ties, trousers and shoes, while the majority of the women were dressed in blouses, trousers, and boat shoes, except for one who wore a dress, panty hose, and low heel shoes. It was evident that some of their wardrobes were new: one of the guys had even forgotten to remove the clothes tag on his shirt. Many of the students wore branded glasses, watches, belts, and shoes. After taking the photographs, Shirley returned to her orientation. Referring to a reminder she had written for the students in the folder, she went over the administrative matters. The first item was their weekly schedule (see below). Shirley explained that on those days when the morning meetings were held, breakfast would be provided half an hour before at one of the conference rooms. She reminded the students again about the rules against eating and drinking in carpeted areas, including the main conference room where the morning meetings were held.

Table 3: Weekly Schedule of Clerks in Internal Medicine

Time	Monday	Tuesday	Wednesday	Thursday	Friday
07:30 – 08:30	Morning Meeting	Medical Meeting	Morning Meeting	Prof Rounds/ Journal Club	MM/GM*
08:30 – 09:30	Work Rounds				
09:30 – 12:00	Ward Rounds				
11:00 – 12:00	Radiology Discussion				
12:00 – 13:30	Lunch				CHD**
13:30 – 15:30	Clerk Conference				
16:00 – 17:30				Int. Medicine Class	

* Morning Meeting or Grand Meeting (on the first Friday of each month)
** Clinical Humanities Discussions on alternate weeks with lunch provided

The morning meetings would be followed by a debriefing session conducted by Prof. Deng, where he would explain and summarize the discussion that went on before and answer students' questions. The debriefings grew out of feedback from their seniors who complained that most of the topics presented and discussed during the morning meetings were too difficult for them to understand. Prof. Deng, a mentor, offered to give the students a ten to fifteen minutes' debriefing afterward. The Professors Rounds involved bedside teaching by some senior doctors on cases presented by the clerks and interns, and it alternated with the Journal Club where students would discuss medical articles they had been given. Shirley advised the students to practice their case presentations a few times beforehand, first on their own and then with their peers or seniors. The Clerk Conference was a series of classes on history taking and physical examination given by Dr.

Meng but students were expected to take turns to report cases during the latter half of the series, while the Internal Medicine Classes consisted of topics given by various doctors from different sub-specialties, such as heart sounds, antibiotics use, chest X-ray reading, and pulmonary function tests.

Shirley told the students to call her if the physician responsible for teaching failed to show up after fifteen minutes because "doctors are very busy and sometimes they might forget that they have a class." Then she took out the duty roster, explained how she had tried to arrange it fairly, and the rules for changing only in absolute necessity. Next, she described the types of leave of absence and told the students that they could not take any personal leave or typhoon holidays. She explained that they were responsible for their patients and nobody would take care of their patients for them if they did not show up, unless they lived very far away and it was impossible for them to get to the hospital during a very severe typhoon. It took a while for the students to understand what Shirley meant by "no personal leave" because quite a few of them were still involved in various sports and music clubs, and they had to represent their department or school in extramural competitions or performances. Shirley told the students that they would have to give her an official leave of absence from their school in those circumstances. While the students were still reeling under the news that they would not enjoy any more holidays, Shirley cautioned them about the importance of carrying their work phones at all times, reminding them

not to leave the phones in their white coats in the lockers when they went into the operating room or outside for lunch. She told them where they could leave SOTH's white coats for washing and to pick up fresh ones, but reminded the students again not to wear it outside the hospital. Then she went over the procedure in the event of a needle injury.

Next, Shirley told the students about their assignments: they had to hand in six "admission notes" (i.e. notes from admitting six new patients) during their three months in internal medicine to Dr. Meng but they were to do so consecutively, i.e. not more than one at a time, and after they had received comments and corrections of the previous one from Dr. Meng. They also had some forms to fill up: various self-evaluation forms, mini-CEX (Clinical Evaluation Exercise) forms, teaching record forms, etc. For each, Shirley showed them a sample from the folder and told them when and who was in-charge of recording them. The students would be assessed each month and individual feedbacks would be given by Dr. Meng, but they would also meet with Prof. Tang monthly to discuss any problems they might have with their learning. Shirley read out the titles and briefly described the remaining notes she had placed in the folder: guidelines on patient safety and hand washing, monthly schedule, the list of medicines interns and clerks were allowed to prescribe, notes by the Chief Resident concerning some practicalities which he would go through with them in the afternoon, for example, use of computers, and locations of the duty rooms, etc. She then reminded the students when the CHDs would be held (lunch time on

alternate Fridays), told them that food and drinks would be provided, referred them to the schedule of the physicians in-charge of facilitating the discussions and related articles for the discussions. Shirley informed the students that for the sake of saving trees, they could take whatever materials they wanted from the folder but they could also request for the electronic files from her and return the printed ones at the end of their rotation in internal medicine to be reused by the following batch of students. She reminded them to check their e-mails often because she would be contacting them through it. Lastly, she brought up the issue of patient privacy again and told the students of the ways SOTH protected the privacy of its patients, such as by not writing their names outside their rooms. She warned them not to discuss about patients in public places, for example in elevators, and what to do when people inquired about the bed number of a certain patient. In those circumstances, students should not reveal the information even if they knew it nor should they say "I don't know", but they should direct the people to the help desks or any hospital staff or volunteer.

It was 9:30 a.m. and the interns who were also beginning their one-month rotation at SOTH and a new surgical resident arrived. The interns consisted of seventh-year medical students from REMS and QEMS. Some students greeted one of the interns who was their senior at school. A young woman from the Information Technology department came to talk to the newcomers about how to operate the computer systems, including the electronic order and PACS (picture

archiving and communicating system) for radiological images. A lot of information was given on how to navigate various software and the speaker went through most of the functions the newcomers would use later on by demonstrating on the screen. No one had any questions in the end and the speaker told her audience that they would have to operate the system by themselves to find out what they did not know and ask others, e.g. their seniors, for help then. Half an hour later, Shirley brought the newcomers to the library where a staff introduced about its use and the internet and electronic resources available for researching information and digital learning. The newcomers sat in front of a computer terminal each and the speaker first explained the various sites before allowing them to operate the computer on their own.

"Happy Learning"

At 10:30, it was time for orientations for the clerks by the doctors in-charge of training in internal medicine and surgery, Dr. Meng and Dr. Shen, separately. Shirley brought those students in surgery to meet Dr. Shen elsewhere. Dr. Meng came and introduced herself as an infectious disease physician who received her medical education and training in the U.S. She was in her early fifties, spoke softly but quickly. Dr. Meng asked the students one by one about their expectations and learning goals in internal medicine. Although the students did not have specific goals, most said that they wanted to learn about taking histories, physical examinations, and

differential diagnoses, and quite a few mentioned “happy learning”. After a student had shared his or her opinion, Dr. Meng would summarize what was said and supplement her own information before going on to the next student. She emphasized to the students that they would be in-charge of their patients from the beginning to the end and advised them to adjust their mentality about their new responsibility. She introduced the different members on the team and their roles, beginning from the clerks and interns, case manager, resident, and attending, stressing that at SOTH, clerks and interns were viewed to be at the same level. She encouraged the students not to be afraid of seeking help and advice from others. Dr. Meng later remarked that the hospital was like the society at large consisting of different people with different personalities, so the students would have to learn how to work with others. She emphasized that learning not only consisted of medical knowledge and techniques but also interpersonal skills. She warned them that they would encounter problems and stress, but the hospital would provide support for them. She told the students who they could go to for help, especially the case manager. When a student mentioned about wanting to learn how to apply her knowledge, Dr. Meng commented that it was rather difficult to apply knowledge to practice and reminded that different people had different learning styles.

Dr. Meng praised what some students said about “happy learning” but cautioned that being happy at one place might not be a good thing because it meant that one was within one’s own

comfort zone and not being challenged to rise to higher limits. She encouraged them to learn about time management and to overcome their shortcomings, for example being shy about asking questions. About the latter, she warned that they might be rejected if the other party was busy, so they had to be observant. She stressed that it was up to the students' initiative to obtain opportunities for themselves to learn and do things. She urged them to learn mainly from their patients and not from books, for example, how to develop a problem list that included all the patient's problems, and whether to group the problems under one diagnosis or separate ones. It was the reverse process to reading up information after a confirmed diagnosis, where one had to seek for the diagnosis from what the patient presented. Dr. Meng elaborated on the different levels of questions and told the students that later on, they would have to learn how to ask more intelligent questions from what they had read and reasoned about the patient. She explained how SOTH had decreased the number of classes given to a minimum so that students would have time for actual patient care, and described some of the changes they had instituted from feedback by past students, adding that the hospital also welcomed their feedback for improvement. Finally, Dr. Meng encouraged the students not to limit themselves but to have a more open mind about the things they would be exposed to, for example, the discussions at morning meetings which might be useful to them later on.

After all the students had shared their thoughts about their clerkship, Dr. Meng went through the "Reminders for Clerks in Internal Medicine" in the students' folder, which contained their daily schedule, requirements, and contents of their classes. She told the students to read over it again in the evening before she explained in detail what the students had to do each day, starting from their own Pre-Round half an hour before the morning meeting when they had to see all their patients. She described what the students should look out for, warned them that some patients might be unhappy being awakened from their sleep, but gave them tips on how to overcome the problem. After the various activities between 7:30 and 8:30 in the morning was the Work Rounds, whereby the students had to finish seeing their patients and checking the lab data before reporting to their residents about their patients. Dr. Meng warned that the residents might be busy managing patients with unstable conditions, in which case the work round would be cancelled. During the Teaching or Ward Rounds usually lasted from 9:30 a.m. to noon, the physician in-charge of teaching that month would bring the entire team to see their patients. Dr. Meng advised the students to lead the team when it was the turn of their patient and to distinguish between making case presentations for new and old patients by varying the duration and content. She warned them that different attending physicians had their own styles or emphasis about case presentations and told the students that it was normal if they felt confused by the different requirements. She encouraged them not to be afraid to bring up their ideas on

how to manage the patient by saying that "it does not matter if you are wrong, but at least you have thought about it," and taught them to be prepared by reading up beforehand and thinking about some intelligent questions to ask. The afternoons would be spent on their patients or attending classes.

Next, Dr. Meng went over more details about patient care. The students would be assigned one patient initially, two later during their first month, and a maximum number of three patients for the rest of their rotation. She advised the students to be the first one to see their new patients before others did in order to decrease their chances of being turned away. She told the students that they might feel hurt if they were rejected but the situation would improve after a few days, or otherwise, they could ask their attending for help. Dr. Meng went on briefly about how to write out an admission order using the mnemonic, ADC-VANDALISM,[6] which was printed on a pocket-sized reference card in the folder. She shared that initially she did not place much emphasis on writing orders, but later she discovered that students would not think about how to manage their patients if they had no need to write the admission and discharge orders themselves. She then went on to explain about the different types of notes in a patient's chart: admission note, daily progress note, weekly summary, on- and off-service notes, and discharge note, and when

[6] Mnemonics are commonly used in medicine to assist the memory. ADC-VANDALISM refers to (1) admitted to Dr. ____'s service, (2) diagnosis, (3) condition, (4) vital signs, (5) activity, (6) nursing, (7) diet, (8) allergy, (9) laboratory, (10) intravenous fluids, (11) special orders, and (12) medications.

they should be written. She told the students that other members of the team would also be writing their own notes about the patient. Dr. Meng then talked about the homework (six admission notes) the students had to hand up to her, reiterating what Shirley had already mentioned but adding that the students could include information they had read up from books and the literature pertinent to the patient's situation. She advised the students to hand up their assignment earlier, stressing that she would focus on the format and structure for the first couple of admission notes, and on their analysis and literature review later on. Next, Dr. Meng went through the classes that would be held for the students, especially the Clerk Conference that she would be giving the students.

Dr. Meng then introduced the list of Clerkship Learning Objectives[7] in the self-evaluation forms the students would be using to grade themselves at the beginning and end of each month. She emphasized that its purpose was for students to reflect on their learning and that it was normal if their learning went up and down sometimes. She described what the students should do while they were on duty and advised them to hang around the wards so that the nurses would call them if there were any problems in order to increase their chances for learning. After they had evaluated the patient and decided on the management, they were supposed to discuss with their

[7] The Clerkship Learning Objectives comprised of more than two hundred items in three areas: (1) general clinical core competency, which was made up of twelve sections, including history taking and physical examination, oral case presentation, written medical record, decision making, communication with patients, teamwork, etc; (2) patients with a symptom, sign or abnormal lab value, that encompassed nine common conditions, for example, fever, altered mental status, and anemia; and (3) patients with a known condition, that included nine diseases such as pneumonia, hypertension, and acute renal failure.

seniors. Dr. Meng told the students that at SOTH, they did not stress on how to do procedures in internal medicine even though the students would probably encounter common ones like inserting a nasogastric tube or Foley catheter in the wards. She emphasized that if their patients required such treatment, the students could first observe how the procedure was carried out before requesting to perform it. Next, she informed the students that she would be meeting them individually once a month after the student assessment meeting to give them feedback about their performance and to solicit their input. However, she did not explain how the students would be assessed. Dr. Meng then talked about the team composition which was printed in a diagram, telling the students that they would be placed in different teams each month.

Last of all, Dr. Meng went over some of the other files in the students' folder, particularly recommending the students to read an informative and lively article that offered many useful tips to medical students written by an attending while he was a senior medical resident at SOTH, a couple of samples on patient write-up by a Taiwanese-American who interned with them for a month, guidelines on patient safety and hand washing procedures, and the list of medications that students could prescribe. There were a few articles written by other students about their experiences and Dr. Meng thought that the students could just skim through to have an idea what they were about and read them later when they encountered similar situations. The articles were given to participants after various Clinical Humanities Discussions in the past and who had

found them useful and recommended that they be included in the reference materials for future students during their orientation. Throughout Dr. Meng's briefing, the students raised questions at various points but at the end, there were no questions. Dr. Meng reminded them to feel free about asking questions, particularly to the teaching attendings. I noted that the students were listening attentively and some of them took notes in their notebooks except for a guy who wrote directly on his tablet computer.

The Mentorship Program

It was noon and Shirley led the students to the adjacent conference room for their meeting with their mentors accompanied by Dr. Meng. The students doing their surgical rotation were already waiting there with Dr. Shen. Two rows of *bentos* (boxed lunch) with plastic chopsticks were neatly laid out on the table. Prof. Tang was there to welcome the students again. Shortly afterward, other mentors arrived and sat next to their mentees. A couple of them initiated casual conversation while everyone consumed their food. The talk revolved around language abilities, with the mentors asking the students if they knew how to speak Taiwanese.[8] When it was known that not many students could speak Taiwanese or Hakka, several mentors encouraged the

[8] This refers to the dialect spoken by the majority (70%) of people in Taiwan which is similar to Hokkien, the dialect of people in southern Fujian province in China, where the ancestors of most Taiwanese migrated from. Other languages in Taiwan include Mandarin (the official language), Hakka (another dialect), and more than ten aboriginal languages. Unlike Chinese, which is part of the Sino-Tibetan language family, the aboriginal languages in Taiwan belong to the Austronesian language group.

students to start learning the dialects by sharing their past experiences on how conversing in the patient's mother tongue might help break communication and trust barriers in some patients. After about fifteen minutes when most of the doctors had finished eating, Prof. Tang gave a short description of the mentor program again. The eight mentors including Prof. Tang introduced themselves by mentioning their name, specialty, and role in teaching if applicable. They were mostly in their fifties to seventies, all whom volunteered to mentor the students when SOTH collaborated with REMS in the clerkship training program. There were two women, three were REMS alumni, and many also helped out with the teaching by being involved in the Debriefing, Professors Rounds, Journal Club, and Clinical Humanities Discussion. It was then the students' turn to introduce themselves. Most of them were from urban areas and a couple of them had lived or grown up overseas. Shirley noted that unlike the gender ratio in medical schools (one woman to two men), two-thirds of the batch of clerks at SOTH that year were women. After the brief round of introduction, the students left with their mentors to talk.

When the students returned to the conference room after their meeting with their mentors, they exchanged information about their encounters. A student mentioned that her mentor was the person who interviewed her during the application while Prof. Tang's mentee found him to be "like a kind and gentle grandfather". Shirley arrived to remind them to collect their passwords for wireless internet access from the IT department. One of them told Shirley that the others had

gone to get coffee from the convenience store[9] and to collect their mobile phones. Shirley sat down and chatted with the students, inquiring why they had such big bags and commenting that young people nowadays were rich and could afford to buy freshly-brewed gourmet coffee, compared to the past when people mostly had instant coffee (note: Shirley was in her late thirties and married with two children). Again, Shirley reminded the students that the chief resident did not like them to venture outside the hospital during the day. The rest of the students and interns began to file into the room with coffee cups in one hand and checking out their mobile phones in the other. When all had assembled, Shirley told the surgical students which team they were in and who to report to, and they left.

Promptly at 2 p.m., the Chief Resident, Dr. Rick, arrived at the conference room. He went over the daily schedule with the newcomers again and like Dr. Meng, Dr. Rick focused more about the contents of their work and encouraged the students to learn from their patients and not from their books. He stressed to the students that they were the first in line in patient care so they had to be responsible. For example, they should not return to the dormitory to take naps in the

[9] The convenience stores in Taiwan provide a wide range of goods and services and most of them are opened twenty-four hours a day, seven days a week all year round. They are very densely located in urban areas and used by many. A good example is a friend of mine who is an emergency physician who works 12-hour shifts. She relies on these stores for decent food at all hours in the form of *bentos* or pasta that could be microwaved on-site, rice balls, salads, breads, fruits, and drinks. She also pays her bills, picks up online purchases such as books or train tickets, and buys small household items, groceries, or stationery there. Other services include photocopy and printing.

afternoon,[10] as one of their seniors did even though his patients' conditions were stable, because there might be emergency situations where they had to be first responders to the scene. Then Dr. Rick talked about what would happen when the students were on duty, detailing what they should do, who would also be on-call, and some of the common problems they might encounter. The students listened politely, even though it was the third time they had heard most of the contents. However, none of the students replied to the questions Dr. Rick asked, giving the impression that they did not know the answers.

Dr. Rick remarked a few times that the students should not hesitate to call the residents or attendings on duty if they had any questions or problems, emphasizing that the latter were all very nice. Quoting the Chinese idiom, "He who teaches, learns",[11] he stressed that teachers actually learned from students too. He told the students that he would only see them while on duty, advised them repeatedly not to give themselves too much stress, and taught them to ask questions after they had looked up some information. Dr. Rick told the students that they were very lucky because they had a team at SOTH to specifically teach them. He summarized his experience at other hospitals as "[the] clerks were treated as 'wandering spirits' and interns were

[10] In Taiwan, children in elementary schools are taught to take a half-hour nap by resting their head on their folded arms on their school desks after lunch and the practice is continued up till senior high school. Most people carry the habit into adulthood, believing that the brief midday respite is healthy for the brain and the body.

[11] The idiom is 教學相長, which means that there is mutual growth for both parties in a teacher-learner relationship. It is from the *Classic of Rites* and the complete sentence is, "Learn and know what one lacks, teach and know the problem. By knowing one's deficiency, one can then reflect on it; by knowing the problem, one can then strengthen oneself. Therefore we say, he who teaches, learns."

seen as ‘cheap labors’,” and even if one wanted to learn on one’s own from the charts or patients, one could not grasp the essence well without others’ guidance. In comparison, at SOTH, the teaching team would direct them how to approach a patient through fundamental skills such as history taking and physical examination in a step-wise manner, and those skills would be useful to them throughout their careers in clinical medicine, unless they chose specialties that did not require contact with patients, such as pathology.

The interns, who already had a year of clinical experience, asked many practical questions about being on-duty, including the times for hand-overs and those during weekend duties, the chain of responsibility, what and how much responsibilities they had or were allowed to do in terms of prescribing medications, receiving new patients and writing up admission notes, where they could collect the surgical scrubs to wear on duty, etc. Dr. Rick answered each question patiently and told the newcomers that the hospital provided meals for those on duty, emphasizing that “it isn’t much, but still, it’s a bit of compensation”. He told the students that although theoretically those on duty on Friday had to attend the teaching rounds on Saturday, if they were too tired the following morning from lack of sleep because they were called very often to handle patients’ complaints during the previous night, it was okay for them to leave after they had done the hand-over. Dr. Rick also taught the newcomers how to call the residents and attendings from

their work phones and house phones. Before he ended, Dr. Rick wished the students a fruitful and rewarding learning experience.

Then Shirley came in with the students' hospital identification cards. The students asked where they should wear them and was told to clip them onto the left collar or breast pocket of their white coat. She directed the interns to the general medical ward before administering the pre-test to the clerks. It consisted of thirty-one cases with a question each printed on individual sheets for students to write their answers on. Although the students were given ninety minutes to complete, most finished much earlier. Some of them told me later that they found the test difficult and that toward the end, they were so overwhelmed by the questions that they did not know what they were writing about. After the students finished, Shirley brought some of them to the basement to borrow bedding for their dormitory. In actuality, the majority of them had moved into the dormitory the previous evening. When the staff at the laundry room — all middle-aged women — saw the students, one of them exclaimed, "These are our future stars!" The students looked at one another shyly; they could not envision themselves as being outstanding yet but appreciated the confidence those older women had in them.

Being Professional

It was about 4:30 p.m. when Shirley took the students up to the general medical ward. On the way, she mentioned about the gymnasium on the top floor and some of the extramural classes the hospital offered to its staff, e.g. Yoga and Tai-chi, but she added that the students probably would not have time to attend them. Shirley took the students to their locker room where they left their belongings before she introduced them to one of the residents, Dr. Ray, who was at the nursing station. Shirley left and the students in Dr. Ray's team gathered around him while those in the other team stood slightly apart, looking lost. Maria, the more experienced of the two case managers, came to greet the students. She gathered them into the small conference room at the back of the nursing station where the new interns were to begin her own orientation.

Maria first introduced the macro environment and she started by asking the students the functions of various wards on each floor. Her audience did not know many of the answers so Maria had to tell them: general medical and surgical wards in the two wings of the hospital where they were, the wards of other departments and sub-specialties on the upper floors, and the chemotherapy and palliative care wards on the top. Maria summarized, "Therefore, the more serious your problem is, the higher up you are, and the closer to heaven you will be." Then Maria tested the students on the locations of the emergency exits and where each led to. The students had walked up and down the central staircase with Shirley earlier but were unaware of the

presence of those near the end of each wing of the hospital. Maria told them to take a walk down each staircase later to find out where it opened to, so that they could help direct and carry patients during evacuations in a fire. Then she introduced the micro environment: the locations of the bathrooms, pantry and water fountains, and conference rooms in each ward. Maria informed the newcomers that they had to help maintain the cleanliness of the conference room, not to leave things around because she would throw them out after a day, that they should be stringent about printing in order to save paper and the environment, and to hand-copy the patients' lab data from the computers instead.

Still using the question-and-answer method, Maria went through with the students their daily schedule, focusing on what they should do during various time slots, and how they should arrange their time during the day. She informed them that they would be given increasing number of patients and responsibilities, encouraged them to discuss often with their seniors, and not be afraid of being rejected. Maria appointed a student to demonstrate how to introduce herself to her patient and discussed better ways of stating their purpose. She reminded the students to see from the patients' perspective that they were ill and would like to be cared for, and that it would be the first time the patients saw them, so they should act in a confident and mature manner. She also taught them what to do if the patient refused to see them. Then Maria introduced her own role and other resources they had for learning at the hospital, for example,

they could ask to discuss images with radiologists and tissue slides with pathologists. After that, she went through the schedule of the nurses and their work hours, times for dispensing meals and medications, and emphasized the importance of having good interaction and relationship with them because "the nurses spend more time with your patients than you, so they know the patients better!" Maria also introduced other staff on the team, such as the clinical pharmacist and nutritionist who might join them during ward rounds. She told them how to get the patient or family to call them when they had problems but also stressed on setting a boundary between staff and patients, for example by not letting the latter enter the nursing station because it was their work place. Maria talked about the concept of contaminated versus clean areas, reminded the students not to place their clipboard and notes on the beds of their patients, and went through the procedure for hand washing. She introduced the hospital's code for cardiopulmonary resuscitation (CPR), which was rather creative and would not alarm the patients and others unnecessarily when it was broadcasted over the public announcement system. She further explained what the students should do when it was their patient on CPR: they should stay even though they might not be able to help because it was their responsibility.

Maria then talked about when the admission orders were due for new patients. She tested the students on how to write the admission order, and since Dr. Meng had gone through it in the morning using the mnemonic, the students managed to answer quite well with some probing. She

emphasized other details the students had to know about their patients, including their bowel movements, appetite, and sleep. Like others, Maria stressed the importance of learning H&P, of having one's own thinking and treatment plan for their patient, and paying attention to details, such as the medications their patient was taking. Maria advised the students to be proactive in their interactions with the residents but cautioned them to find the right time when the latter were not too busy. She also stressed what Shirley had already told them about not taking the day off easily during typhoons by saying that "it's your calling",[12] and added that there would not be anyone else to take care of the patient in those situations. Maria continued to talk about what it meant to be professional in terms of their dress code and behavior: men with ties, no jeans or sports attire, no short skirts, no bright or too casual shoes, no acting childishly, no eating or drinking while walking with white coats on. Maria talked further about how the students would be assessed, the top item being their attitude as observed through how they asked questions, whether they were proactive, if they had a good grasp of the patient's condition, and also their own improvement through time, e.g. not making the same mistakes in their admission notes after they were being corrected. Echoing the chief resident Dr. Rick, Maria told the students that they were the first-line doctors, so they had to administer total care to their patients. She encouraged them to balance their time and learning, and not skip meals or stay up late. She also stressed

[12] The exact phrase used was 天職, which means "sky/heaven" and "duty/position". It evokes a sense of duty and responsibility, and infers that it is their vocation and mission in life.

learning from the patients above reading textbooks. She told the students that they should help any patient they saw who were in need anywhere, such as in the hallway.

Maria then asked the students where they should stand during ward rounds and what they should do. She told them the story of one of their seniors in the first year SOTH began accepting students for clerkship training. He had stood at a very good place — right in front of a patient at the foot of the bed — while the patient's tracheostomy was being removed. The patient coughed and "Plahh! The phlegm splashed onto him," Maria told them. The students grimaced at the unpleasant thought. Maria thought about a related issue and reminded the women students to tie up their hair before they go to the bedside or else they risk having patients' bodily fluids or secretions stuck onto their hair. Returning to her subject, she told the students that the person in-charge of the patient should stand across the attending physician to assist him or her, while the rest should help with other tasks, such as turning on the light and raising the bed to the highest position. Maria emphasized the importance of the latter during physical examination so that they would not have to bend their backs all the time. She cited the example of a male nurse who did not pay attention to his position while he lifted or carried patients, and he sprained his back and had to quit his job within a year. She mentioned that she, too, could not bend her back anymore. Maria repeated the tasks the students had to do during the ward rounds, including turning off the television, but she reminded the students they had to inform the patient in the adjacent bed if they

were to do so and to return everything to their previous state before leaving. Next, Maria focused on the case presentation. She emphasized on the description of the patient's previous and current situation, for example in a patient with shortness of breath, the distance he could walk before and then. She reminded the students to pay attention to details and report exact numbers, i.e. quantify, instead of just saying that a data was normal or not. She elaborated on how the students could ask about the pain score and how to estimate the amount of food or even calculate the number of calories a patient was eating. Maria compared the case presentation to telling a story and advised the students to practice till they could memorize the entire presentation later on. She then went through how and when the discharge orders should be written, and reminded the students they had to inform the patient's physician and make an appointment for the patient to return to the latter's clinic. She discussed how to consult a specialist using an example and told them the process whereby they would be allowed to perform certain skills or techniques: first observe, then recite the procedure verbally, before finally being allowed to do, emphasizing the "Do No Harm" principle. Maria reminded the students that they had to respect the patients and their privacy while they were learning, particularly, not to be overzealous about performing a physical examination. She shared with them things they could do with their patients, such as watching the television, as one of their seniors did. She told the students what to do if they did not have any patients: they could learn from their classmates' cases. Finally, Maria taught the students how to

page the other case manager and her. The students were surprised that the case managers were not issued mobile phones for work and some of them had never seen a pager. Maria joked that her machine was "an antique". She got a student to page her from the house phone inside the conference room. It took a while for the students to get used to its working.

The "Education" of Newcomers

Thus ended the students' first day proper at the hospital; they were bombarded with information but still they had not gotten to see any patients yet. Most of the students thought that the orientation was useful because it gave them an idea of what their responsibilities were, what they should do, and who they could turn to for help, etc. Moreover, it served as a buffer to the busy life they would lead during the next six months. Compared to the treatment the students would receive at other teaching hospitals later on, which was effectively "no orientation",[13] these newcomers in medicine felt that they were being well taken care of at SOTH. However, each year, issues about the timing of certain aspects of the orientation or classes, i.e. when a piece of information should be provided, would inevitably be brought up during the students' feedback and no matter how the hospital adjusted and changed the schedule, students of the

[13] Basically, what happened at other teaching hospitals was that the clerks would find out from their seniors or the previous batch where and when they had to show up on the first day of their rotation. Usually it would be at the morning meeting, after which the Chief Resident would assign them to their various teams and mention briefly what they had to do. Then the clerks would be left mainly on their own.

following year would still complain that some courses were either given too early or too late. As a result, the hospital came to a conclusion that the timing of the orientation courses did not really matter because some students would inevitably not hear it or forget what they had been told anyway, so the only thing to do was to constantly remind the students about certain things. An example was what Shirley and Prof. Tang told the students about Prof. Tang seeing them once a month to talk about their learning. A student forgot what it was for when Shirley told her that she had to meet Prof. Tang later that month. The job of repetition and reminder was accomplished by having different people tell the students what they had to do in different ways. For example, on the first day, it was done by Shirley who mostly focused on the administrative aspects, Maria who talked about the practicalities (including the locations of the bathrooms), and Dr. Meng, Dr. Rick, and Maria who introduced the clinical aspects. Yet, the contents given by the latter three also differed. It is interesting that the details these people provided varied proportionally to the amount of contact they had with the students, with Maria the case manager having the most contact with them in the wards during the day, followed by Dr. Meng the doctor in-charge of training in internal medicine and one of the teaching attendings, and lastly, Dr. Rick the chief resident. Later on, the responsibility of reminding the students what to do would fall mainly on Shirley the secretary and those in the teaching teams.

What is interesting was how some of the information provided was consistent throughout, mainly, the students' learning goals at the hospital, including the importance of learning about history taking and physical examination, and that of learning from patients instead of books, encouraging the students to ask questions, and being totally responsible for their patients, etc. I asked the people involved how that came to be but none could give me a concrete answer. After observing their workings for a few months, I concluded that it was probably through various discussions about the students' learning that took place at SOTH, especially during the monthly student assessments and mentor meetings. What was also reflected were some of the hospital's values, such as being environmentally-conscious — as seen from what both Shirley and Maria told the students about conserving on printing — and helping patients as much as possible, for example, directing people with queries to the help desks, or assisting patients anywhere in the hospital. The latter involves the act of acknowledging the students as part of the "community of practice" within the hospital (Lave and Wenger 1991), which from the beginning was done when Shirley told the students they could wear SOTH's white coats and enjoy its laundry services, and when she gave them the hospital formulary. It was also implied later in a couple of places during Maria's orientation, such as when she told the students they had to help evacuate patients during a fire emergency. However, the hospital distinguished between the clerks and interns, more out of reason because of the short duration (one month) of the latter's stay at SOTH, compared to the

three or six months by the former. The interns did not have mentors, they were lent the formulary, and they did not have library borrowing privileges though they could photocopy for free 150 pages at the library.

This act of inclusion gives the students a better sense of belonging to the hospital compared to their experience at other hospitals, which the chief resident described in a nutshell as being a "wandering spirit". I found this sense of belonging quite pervasive throughout SOTH. Perhaps it can partly explain a phenomenon I was told by a physician who had previously worked there. He told me that the atmosphere at SOTH "somehow makes people gentler and friendlier", for example, the staff and visitors would not rush into the lifts like in other hospitals but would even hold the doors open to wait for others to enter. I often witnessed how hospital staff directed or helped visitors in a friendly manner. Once I saw a volunteer in uniform kindly reminding some people who were eating at a table in a waiting area that eating and drinking were prohibited there; there were signs on the tables but somehow the people had not seen them. A mentor told me that a cafeteria staff once warned him of an impending typhoon while he was picking up dinner. He had told her that his family was away that weekend and she, knowing that he did not watch television, reminded him of the upcoming bad weather. On my part, I was often asked by various people who I was during my fieldwork.

Being part of a community of practice also carries certain duties and responsibilities, or "calling" as Maria described, and having to assume a professional manner: a prevailing message that was being drilled into the neophytes on their first day. So the students did not have freedom to take leaves of absence easily anymore, they could not enjoy the day off when there was a typhoon, and they even had to help evacuate patients in emergencies. Other not so profound responsibilities include having to maintain the cleanliness of the places they used, not being able to leave the hospital during the day, and not being able take a nap after lunch. With each, the hospital staff explained their rationale for the rule and was reasonably flexible about some of them, making them more like guidelines to be followed rather than rigid rules and regulations, for example, if one were unable to get to the hospital in a very severe typhoon, or the dress code concerning ties and jeans could be flexed for interns who lived out of town and had only brought a limited wardrobe to SOTH. Yet, it was difficult to judge whether something was a guideline or a rule because once an intern was reminded about drinking from her flask before the morning meeting at the main conference room which was carpeted. However, the Clinical Humanities Discussions were often conducted in a conference room with carpet floor in one of the wards and eating was allowed. I asked Shirley for the reason and was told that it was because there were usually many meetings going on during lunch and all other conference rooms were booked, so she was left with only that room for use.

Other messages that were given during the orientation include understanding the perspectives and situation of other people, emphasis on interdisciplinary teamwork, and to a lesser extent, that the welfare of the patients had even more priority than the students' learning. So although the students were encouraged to ask questions of others, they were brought aware that the nurses, residents, and attendings had their own busy schedules, and therefore sometimes they could not help the students right away. However, it did not mean that students could not ask them questions at another time, so the students had to learn to be observant about others' situation and not feel dejected when they were refused but to try at another opportunity. Another example was how Maria told the students to think about how their patients would see them — young strangers — when they introduced themselves to the latter so they should not take it for granted that patients had to accept them and answer their questions. This is an instance on how to cultivate empathy in medical students by putting themselves in others' shoes. Maria's orientation about the nurses' work hours, daily schedules, and roles in patient care was helpful to let students appreciate the importance and understand the situation of those they would be working closely with later on. Interprofessional education is a significant element that is missing in most medical students' education during the pre-clinical stage and they are not taught about the presence or role of nurses and other health professionals, such as nutritionists, pharmacists, social workers,

and various technicians. Thus when the medical students become doctors, they do not know how to work with their colleagues and oftentimes it causes tensions and conflicts.

Looking back at Professor Peng's welcome speech, I believe that SOTH had accomplished the first three items out of the four keys to medical education that he delineated. As I briefly mentioned, SOTH actively recruited and selected their clerks from REMS, mentored them, and created an environment conducive to their clinical education. About Prof. Peng's last point about choosing one's field according to one's interests, it would be up to individual students, but we shall see later if SOTH were able to direct the novices upon their own paths. As President of the hospital, Prof. Peng played a more directive role in the orientation by outlining grand concepts, visions, and ideals, while the Director of Training, Prof. Tang, assumed a more supportive role, first by warning the students about the pressure they would be subjected to and showing understanding of their plight and uneasiness over their novice status, before comforting them with information about various channels for assistance, guidance, and support. He would continue to play the role of guide, helper, and mentor throughout the students' training at the hospital and even after they left. So Prof. Tang grounded the students where they were at the periphery, while Prof. Peng pointed the novices to what they could achieve or attain, and thus they complemented each other in their welcome speeches.

I have discussed the "when" and "what" of the orientation, and I shall now look at the "who". Echoing my previous point about one of the blind spots in medical education — being aware about the roles of other health care professionals — I noticed that initially, the students did not take the case manager, Maria, seriously but they paid more attention to what Dr. Meng and the Chief Resident told them. One reason might be that Maria was a nurse, because later on, I heard a male clerk calling her "Maria" instead of "Sister Maria", which would be the proper way of address given that she was much older than him and even though he addressed the residents who were only a few years older than him as "Sister Senior Classmate". Another reason could be that Maria and the other case manager were not properly introduced to the students on the first day; only Dr. Meng mentioned case managers when she was talking about who the students could approach for help and while she was describing the composition of the teaching teams during her orientation. Although Prof. Tang, Dr. Meng, and Shirley understood and appreciated the important role the case managers played in teaching the students and they would speak highly of them later on, it was interesting that they neglected to mention these people during the orientation. I had suggested to Shirley about including Maria's orientation into the schedule for the first day but Shirley thought that case managers were not required to formally teach the students, even though Maria was more proactive, so much so that the Head Nurse of the general medical ward complained about not knowing which side she was on, implying that Maria was

more sympathetic towards medical students than her fellow nurses. I noted that for the first batch of clerks from REMS, it took them at least three days before they realized Maria's importance. Those in later batches appreciated Maria better and sought help from her from the start, perhaps because their classmates in the previous batch might have told them about her.

As for the "how" of the orientation, while most of the staff just read off from their notes or presentation slides, Dr. Meng would give a few concrete examples to each point she wanted to make. Maria took it even further by providing the information through questions and evoking her audience to think. When eliciting feedback, unlike others who would just ask if there were any questions and thus often not getting any, Maria would appoint different students to answer her questions. This kept all the students awake and alert because they had to keep up with what she was saying. We shall see this form of teaching later on in another attending. In comparison, the chief resident Dr. Rick's orientation lacked luster. I did not have the chance to talk to Dr. Rick as he was never in the wards during the day and I did not run into him in the evenings or few weekends I was at SOTH. However, Shirley told me that it was part of the chief residents' training and each might present different contents according to what they deemed important.

In this chapter, we have seen what various old-timers at the hospital informed the novices about what is important and how the former orientated the latter about how to participate within the community of practice. While the quality and content of the orientation sessions might differ,

there were enough repetitions to remind the students of their duties and responsibilities, and how they should make use of their training during their first day.

Conclusion

In this chapter, we looked at what the students were told by various people on their first day at the hospital. We shall keep these in mind and see if they concur with every significant pattern and theme about the hospital and its training program, as Mumford (1970) noted in her study. I wish however, to emphasize that even though a teacher can guide or initiate the students into a particular field of knowledge, the actual learning is determined by the individual's own effort, as noted in the quote at the beginning of the chapter. It is slightly similar to the English saying, "You can lead a horse to water, but you can't make it drink."

Chapter Two: A Student's Initial Clinical Experience

書到用時方恨少
One regrets the scarcity of books when in need
– Lu You[1]

We have seen what the students were told during their orientation by the hospital and we shall now look at what it was like for them during their first few days in clinical practice to understand their lived experience (see Table 4 on the next page). The following is an amalgam of the students' encounters. On their first day after Maria the case manager left, the clerks hung around the conference room for a while, undecided about what to do. Their classmates in surgery came into the conference room shortly after.[2] They had been assigned to their respective teaching teams, seen their patients with their residents, and were done for the day. The two batches of students exchanged information about their day. The surgical students decided to go for dinner except Chris who wanted to return to school on his scooter to see his girlfriend who was at RATH.[3]

[1] The saying was the first part of a couplet composed by 陸游 (1125–1209 C.E.) of the southern Song Dynasty, the second half of which was, "one does not know the difficulty of things unless encountered".

[2] There was a lot of mingling between the two groups of students because they shared a common locker room and some of the surgical patients in teaching teams were also placed in the general medical ward.

[3] The scooter is a common mode of transportation in the densely populated Taiwan because it is cheap, fast, and easy to get around, and does not require much parking space. Its drawback is that it does not offer much protection to its driver and one is exposed to the weather while riding.

Table 4: Activities of a Medical Student during the First Two Days in Internal Medicine

Time	Activity
Day 1	
07:30	Orientation
17:00	End of orientation. Look up information
18:30	See patient. Eat dinner, look up patient's old charts, write on-service note
22:00	End of Day 1
Day 2	
07:00	To ward: look up information of patient. See patient, eat breakfast
07:30	Morning meeting and debriefing
08:40	To ward: check lab data. Present to resident about patient
09:30	Ward rounds: presentations and discussions of patients
10:30	Ward rounds: visit patients
12:00	End of Ward rounds. Handle orders
12:15	Lunch
12:45	To ward or nap
13:30	Class on admission notes and progress notes
15:00	To ward: part 2 of orientation by case manager
15:45	Write progress note and on-service note. Listen to heart sounds of another patient. Duty.
18:00	See new patient with duty intern and duty resident
19:00	Eat dinner at ward and exchange information with classmates
19:30	See own patient, complete on-service note, handle two patients' complaints
22:40	End of Day 2

The medical clerks looked on enviously as their classmates made their way to the locker room to pick up their bags. Then they sat down to work. Irene, a QEMS intern who was on duty that evening, received a call but she had to return to the dormitory to get some stuff and was undecided about what to do. After a brief discussion with her classmates, the consensus was that she should inform the resident first, so she left after calling the resident on-duty.

I observed Chelsea as she looked through the electronic chart of her patient. She got used to the computer software program rather quickly. When she encountered difficulties, she would first try to navigate the system on her own, after which she might either ask her classmates or the interns. Chelsea looked through her patient's admission note, progress notes, and laboratory data, checking non-familiar terms on her pocket handbooks or the internet, and discussing and sharing with her classmates about her patient's condition. She took down notes on the back of the waste papers she retrieved from a tray next to the printer. It seemed that her patient had an urinary tract infection (UTI) and had only been admitted a few days ago. Chelsea was disappointed there was not much information but an intern comforted her that she did not have to read up a lot about the patient. By then it was almost half past six and Chelsea debated with her classmates whether she should have dinner or see her patient. Irene had finished her dinner a long time ago and was running around handling complaints and admitting new patients, while the other interns had finished seeing their patients and left. Craig and Carl offered to go to the convenience store to get dinner for everyone and even though the girls were reluctant to have "fast food", they relented in the end and Chelsea went to see her patient. Before she left, Chelsea checked that she had her notes, stethoscope, penlight, and reflex hammer with her. She went around the ward to search for the patient's room. Before entering, Chelsea took a deep breath, mustered her courage, and knocked on the door. The patient was in her late thirties, alone in her bed, and playing some

games on her tablet computer with the television on. Chelsea introduced herself in the manner Maria taught them and inquired how the patient felt. The patient answered politely and Chelsea continued to ask her some questions. The patient replied that the information was in her past medical records, making Chelsea realized that she had forgotten to look up her old charts. Chelsea then asked for the patient's permission before she conducted a physical examination on the patient. She was uncertain about what to do and had to stop often to think about the next step of the physical exam. The patient bore with it in a friendly manner. She remarked that Chelsea looked rather young to be a doctor and the latter replied that she was still a student. The patient's husband and children arrived, so Chelsea left after thanking the patient. Chelsea heaved a sigh of relief when she stepped out of the room. She confessed to me that she had forgotten to ask some questions and missed out certain physical examinations. I consoled her that it was normal for neophytes and that she could make it up later.

Chelsea went back to the conference room in the nursing station. She shared her experience with her classmates while she had a smoked chicken sandwich and a carton of milk tea for dinner. She exchanged information about her patients with those in her team. Craig's patient was a middle age man with chronic liver problem from hepatitis B infection compounded by excessive drinking while Caitlin's patient was an old woman with slow heart rate who was hard of hearing, quite blind, and only spoke Taiwanese. Caitlin could not speak the dialect so she got Carl, who

grew up in the south and who could speak Taiwanese fluently, to accompany her to see her patient even though Carl belonged to the other team. Chelsea went to the nursing station and asked a nurse for her patient's old charts.[4] It included two past admissions for child births and a few outpatient visits for various ailments, including a previous UTI, and it took Chelsea half an hour to go through it. Then Chelsea looked up some more information about her patient's disease from an online physicians' reference website and started to write the on-service note, but she struggled with some medical terminologies and English descriptions.[5] She sought help from her classmates, mainly from Claire who had grown up in Canada, and from the internet. By 10 p.m., the novices of medicine had been awake for more than fifteen hours and they were experiencing the fatigue, but they still had not completed their on-service notes. Chelsea decided to call it a day and the others seconded her decision. Caitlin, however, wanted to finish her work. While her classmates were leaving, Caitlin reminded them to look through the materials in the orientation folder later that evening.

The next day, Chelsea arrived at the hospital shortly before 7 a.m. with Caitlin, Claire, and Cynthia, the latter two from the other medical team. They all shared the same room in the hospital dormitory and had stayed up till midnight previous night. The girls went straight to the

[4] At the general medical ward at SOTH, notes on the current admission were kept on the computer and printed out when the patient was discharged, while past medical records were filed in the patient's chart.

[5] In Taiwan, medical charts are recorded in English but there had been calls from organizations advocating patients' rights for chart writing to be in the official language, i.e. Mandarin Chinese.

general medical ward, dropped off their stuff at the locker room, and put on SOTH's short white coats. They figured that it would be easier to wear the hospital's white coat instead of their own to save time having to wash the coats themselves. Their pockets were bulging and their hands full of things they carried to the conference room inside the nursing station. Chelsea looked up her patient's notes on the computer briefly before she went to see her patient. The latter had just finished her breakfast and Chelsea asked her how she felt. Chelsea had those questions that she forgot to ask the previous day written down on a piece of paper that she folded into four in her pocket, which she referred to while she filled up the patient's history. The patient asked Chelsea about her condition and the latter, not knowing what or how much to say, mumbled unintelligibly. At that moment, Chelsea's mobile phone rang. It was Caitlin who wanted to tell her to go for breakfast before the morning meeting. Chelsea hurriedly bade goodbye to her patient and rushed out of the room. She ate her breakfast which consisted of a savory bun and soy milk quickly. At the main conference room, there were queues in front of the computers where the staff swiped their identification cards for attendance. Most of them were doctors but there was other staff such as nurses, nurse practitioners, anesthetists, and pharmacists.

Professor Peng was already there to welcome the new batch of clerks and interns. He told them to be seated in the front. He greeted various staff by their name and chatted briefly with each of them. The meeting started promptly at 7:30 a.m. but the room was only half full. For

about ten minutes after that, people filled it up slowly. The topic that day was a review of a certain procedure performed at the hospital and the speaker spoke for forty minutes, after which was the question and answer session where many in the audience asked questions or gave comments. The staff working in the operating rooms started to leave at 8 a.m. The students tried to follow what was going on but the subject was rather difficult for them. A male intern dozed off, his head nodded quite vigorously until his classmate seated next to him gave him a hard nudge with his elbow. The meeting ended at 8:30 a.m. and most of the audience left quickly to start their busy day. The students went to a smaller conference room nearby for the debriefing session by Prof. Deng and they stood in a circle around him. Prof. Deng first remarked about the form of the presentation, such as the background, color and font size of the words the speaker used in his slides, to highlight their importance in communication with the audience. Then he summarized and analyzed its contents, and examined their merits and shortcomings. A few students asked questions and the debriefing ended at 8:40 a.m.

Maria was waiting for the students when they returned to the general medical ward. She inquired if they had slept well the night before. Then she reminded the students to see their patients and to report to their resident before she assisted individual students with their problems. Chelsea checked quickly if there were new data about her patient's laboratory tests but the result of the urine culture was not out yet. She completed her patient's notes and printed them out in

half size so that they fitted onto a single sheet of paper. Then she went to look for her resident, Dr. Ray, at the nursing station but he was on the phone. Craig was also there asking the duty intern, Irene, about his patient who had some problems the previous night. As she waited, Chelsea softly rehearsed her case presentation from her printed notes, highlighting certain points with a yellow marker. Later when he was free, Dr. Ray listened patiently to Chelsea's report. He asked a few questions which made Chelsea realized that she had missed out her patient's radiological images. Dr. Ray demonstrated how to present the case more succinctly and directed her to look up further information. He also reminded her to give the exact number of her patient's laboratory data, particularly the white blood cell count, instead of saying that it was abnormal or high. Chelsea thanked Dr. Ray before she returned to the conference room to work on her case presentation. Maria approached her to find out how she was doing, and she praised Chelsea when she heard that she had rehearsed with Dr. Ray.

The Ward Rounds

At 9:30 a.m., the attending physician in-charge of heading Chelsea's team, Dr. Han, a senior hematologist, arrived. Dr. Han discussed with Maria about where their discussion during their ward rounds should be held. The attending physician of the other team showed up and they decided that Dr. Han would have use of the conference room since his team would be admitting

the new patients that day. As the clerks and interns gathered around Dr. Han at the table in the middle of the room, Maria printed out the patient list for him. A clinical pharmacist, Phyllis, joined in. Dr. Han greeted the team and briefed them about how he would conduct the ward rounds and what he expected from them, mainly, that the students had to present their cases within three to five minutes, but longer for new patients, and that they had to finish writing their progress notes by 4 p.m. so that he could look over them. Next, he went through the patients, starting from those new patients but there were none, so he proceeded with the more critical ones before going down the list for the rest. The interns were given the more serious patients so they reported first. Dr. Han seldom interrupted the students' presentations but would summarize their report and ask a few questions. Sometimes Dr. Ray, Maria or even Phyllis, would fill in for the students. When they needed to look at the radiological images or other tests, they turned to one of the computers in the conference room. Dr. Han consulted Phyllis about the use of medicines a few times and they had a lengthy discussion with Dr. Ray about the dosage of an anticoagulant in a patient with atrial fibrillation. At the end of each case, Dr. Han would remind the students of key points to note in the patient and warn them if they should pay more attention to a particular one whose condition is unstable or a potential complication.

Chelsea was the last to report among the clerks. When it was her turn, she took out her notes and read from it in Mandarin Chinese peppered with English acronyms:

> Ms. Lin is 39 years old and she was admitted due to fever and painful micturition since last Friday evening. Her highest body temperature was 38.6 degrees Celsius and besides pain on passing urine, she had to go to the bathroom very frequently, roughly about once every ten to fifteen minutes. Initially, she drank lots of water on her own, since she had the same experience before but the symptoms persisted and she developed left flank pain. So she came to our emergency room on Saturday evening and was admitted under the impression of acute pyelonephritis. Her lab results showed that her white blood cells were increased up to 12,800 with 92% segments and her urinalysis was positive for white blood cells, nitrites, and bacteria. She was given intravenous antibiotics but her symptoms persisted until Monday. The abdominal CT with contrast performed on Monday ruled out structural abnormalities, stones or abscesses. Her lab tests this morning showed that the WBC has dropped to 8,000 and her UA has returned to normal. Reviewing her past history, she had an episode of UTI five months ago and was treated at our OPD with oral antibiotics.[6] The reason for her UTI could be because she works as a sales assistant at a shopping center, and so she does not drink a lot of water or go to the bathroom frequently. Last Thursday and Friday, her company had an annual sale and she was up on her feet for twelve hours during those two days, with two 15-minute breaks for meals only, even though their official meal time is half an hour long.

Dr. Han nodded his head after Chelsea had finished her presentation and commented that she had reported well. He praised her for quoting the exact number of the patient's white blood cells and asked about details of the history, the patient's first episode of UTI, her symptoms then compared to the current one, its possible causes, and why the patient required hospitalization this time. Chelsea replied but Dr. Han was not quite satisfied with her answers. Dr. Ray interrupted that the reason for the patient's admission was because it was a repeated episode of UTI and structural abnormalities were suspected from the patient's abdominal X-ray at the emergency room. Dr. Han continued to question Chelsea if holding back urine would cause a healthy young

[6] CT is short for computed tomography, WBC stands for white blood cells, UA means urinalysis, and OPD refers to the outpatient department.

woman to develop an infection of the kidney. Chelsea could not answer so Dr. Han told her to look up risk factors for acute pyelonephritis and to think of other diseases with similar presentation. He also reminded Chelsea to ask about the patient's sexual activity and method of contraception, especially, the use of spermicides, which is also a risk factor. He advised the students to overcome their shyness and cultural inhibition of inquiring about such matters, citing his experience during residency of seeing a fifteen-year-old girl at the ER who presented with lower abdominal pain. He could not figure out what was wrong with the patient until he "suddenly had an epiphany" to ask about her last menstrual period, and it turned out that she was pregnant. Dr. Han made a gesture of flipping something open with his thumb and index finger when he was talking about having the flash of insight and his face brightened up at that moment, making his audience smile. He questioned Chelsea how she would manage her patient and the latter replied that she would continue the antibiotics. He gently probed, "For how long?" Dr. Ray interrupted to say that he had a call from the lab just now about the preliminary results of the patient's urine culture which yielded the *E. coli* bacteria but the results of the antibiotic sensitivity tests were not out yet, so he would continue the current antibiotic. Dr. Han agreed and reminded Chelsea to inquire about the patient's fluid intake.

It was 10:30 when everyone finished reporting their cases and the team began the ward rounds. Chelsea thanked Dr. Ray softly for his help with her oral presentation. They went

through the patients according to their room number. Maria reminded the students not to bring their clipboards into the room so they left them at the nursing station. The first patient was Caitlin's and Dr. Han asked her to accompany him into the room first. It was the elderly woman with slow heart rate. Before they entered the room, Dr. Han sterilized his hands with the alcohol gel outside the room and the rest of the team did the same. Dr. Han greeted the patient in Taiwanese, "Good morning, Grandma. I have some students with me this morning, so there are a lot of people seeing you today." The rest of the team then approached the patient's bedside. Dr. Han acknowledged the patient's adult children by nodding to them. He sat in a chair next to the patient's bed and held her hand while he spoke into her ear. Maria, Phyllis, and Dr. Ray helped raise the bed, turned on the light and switched off the television. Dr. Han felt the patient's pulse while he asked her a few questions. The patient's daughter answered some of them for her mother. The patient smiled sweetly throughout and asked when she could be discharged. Dr. Han laughed and noted that she had just been admitted two days ago. He wanted her not to worry and be patient. Then he told the patient that he was going to examine her. The family stepped outside while Maria drew the curtains close and the team stood all around the bed inside the curtain. Dr. Han listened to the patient's heart and gestured to Caitlin to do the same. Caitlin stood across from Dr. Han and placed her stethoscope on the patient's chest. He moved her hand to the correct position for auscultation of the apex of the heart. After Caitlin had finished listening,

Maria opened the curtains and the family came in. Dr. Han explained to the patient and her family about her condition and his plan of treatment for her, mainly, that he would consult a cardiologist to insert an artificial pacemaker. He cautioned the patient and family against falling. Before he left, he asked the patient and her family if they had any questions. They did not so Dr. Han patted the patient on her hand and comforted her that she would be well and could go home soon. As he was leaving, Maria appointed some students to lower the bed, switch off the light, and turn the television back on again through gestures. Outside the room, while he was washing his hands, Dr. Han asked Caitlin about her findings of the patient's heart sounds and added his own findings. In addition to the sick sinus syndrome that was the cause of her present admission, the patient had suffered from rheumatic heart disease (RHD) which damaged the mitral valve. Dr. Han told Caitlin to bring Craig and Chelsea to listen to the patient's heart sounds that were characteristic of RHD in their free time and to consult the cardiologist. Maria reminded those students who had not done so to wash or sterilize their hands before they proceeded to the next patient. She told Isaac, the REMS intern whose patient was next, to lead the way. Caitlin fell to the back of the group to ask Maria for the name of the cardiologist.

The clerks were not very quick in picking up what they were supposed to do during ward rounds because they were engrossed by what Dr. Han was saying and doing with the patients and their families, so Maria had to constantly remind them about various things. Dr. Ray assisted the

students with changing the orders but he himself was very busy answering or making phone calls. In the middle of the round, Chelsea's stomach growled. She apologized and Dr. Han joked that it was a good reminder about the time. When the team was about to visit Chelsea's patient, she led the way. Dr. Han greeted the patient, informed her about the result of the urine culture and their decision about her treatment, and checked on her flank pain. Chelsea assisted Dr. Han during the process. As usual, before he was leaving, Dr. Han gave the patient some words of encouragement, and the latter thanked him and Chelsea. There were a couple of patients on the upper floors after that and Dr. Han took the stairs. He walked very fast and the students had difficulty keeping up with him. Maria noted that Caitlin was panting from the exertion of climbing the stairs and asked if she exercised regularly, but the latter was too out of breath to answer. When they had seen all the patients, Dr. Han led the team back to the conference room of the general medical ward at a quarter to noon. Some of the students went straight for their water bottles. After everyone had settled into their seats around the big table in the center of the room, Dr. Han reviewed the ward rounds that morning. He told the team that he expected the ward rounds to finish before 11:30, but that included the radiology discussion at eleven which they did not make use of that day, because he wanted the students to present some mini-topics in the half hour before noon beginning from the following week. Therefore, he wanted the students to make their case presentations more concise to about three to five minutes each. He advised

them to practice making case reports on their own a few times the evening before and with their classmates or resident before the ward rounds. Then Dr. Han went over the students' patients again, reminded them of what to follow-up, and which topics they could read up on. He repeated that he expected the students to finish writing their progress notes by 4 p.m. so that they would have time to study in the evening, but he did not want them to be stressed. Last of all, he told the students that he had clinic that afternoon but they could call him if needed. When Dr. Han left, everyone went about completing the orders for their patients. The other team had also finished their ward rounds and the students were also busy with the tasks they were given. Maria helped Caitlin rehearse what to say to the cardiologist she had to consult with over the phone before the latter actually made the call. Caitlin was rather nervous but the doctor was very friendly. He asked about the patient's condition and the tests she had been given, and told her that he would see the patient in the afternoon after he was done at the catheter room. By then, it was a quarter past noon and most of the team had finished their work. Maria told Caitlin to go for lunch with the rest and she would help her with writing out the consultation request later. She informed the students that she would be giving them the rest of her orientation at 1:30 p.m. but Caitlin reminded her that they had a class during that time on writing admission notes, so Maria postponed the time of her orientation till after the class and told Caitlin to meet earlier at one o'clock. The clerks went to the canteen together with the interns, taking the staff elevator to the

basement. Caitlin said that her back and legs were sore from the standing and walking, and her classmates agreed with her. Chelsea added that she felt rather dehydrated toward the end of the ward rounds and remarked that she understood why her senior classmates had stressed the importance of bringing a water bottle.

At the hospital canteen, Chelsea was quite happy to discover that the food was very nice and that "one can see the ingredients in the soup!" unlike at their school restaurant where the soup was very thin and watery. The students sat at a table at the end of the room and Dr. Han and a mentor who arrived later also sat with them. The mentor asked them about their morning and shared with them his experience. He told the students that he often played truant while in his clerkship, visiting nearby places of interests with his classmates. He was quick to add that the reason was because they had neither teaching nor supervision during clerkship, but they eventually had to make up for it by learning on their own later. The mentor continued to share that during his internship, he played a lot of *majiang* while on duty.[7] Chelsea asked if they staked money in the game and the answer was affirmative, although the amount was small because their salary was very low then. At that moment, someone's mobile phone rang and Dr. Han and the mentor began reminiscing about the evolution of ways of paging physicians in the hospitals. The students listened wide-eyed with rapt attention. The mentor noticed that the

[7] *Majiang* or *mahjong* is a game that originated in China which involves four players and 144 tiles. It is similar to some card games in the West, particularly rummy.

students ate rather slowly and he told them that he used to enjoy his meals in a leisurely manner, but during his first week of internship he often went hungry because by the time he finished his work, the shops would be closed. So he learned to go for dinner early and eat quickly before returning to work. He said that he could gobble up his dinner in ten minutes but "the fastest eaters are the surgeons and they can even talk while they're eating!" Chelsea commented that she hoped that she would not have to become so. After lunch, the students went back to the ward. Some of them disappeared after a while to take a nap. Maria appeared at 1 p.m. to work with Caitlin on writing and sending the consultation request.

At 1:25 p.m., the clerks from both teams left for their class on writing admission and progress notes, joined by a couple of interns who were free in the afternoon, but they had some trouble finding the venue. They had to call Shirley for help and she directed them over the phone to the small meeting room on the ground floor that was hidden inside the maze of outpatient clinics. Dr. Meng was waiting for the students when they arrived. Dr. Shen, the doctor in-charge of surgical training, was also there to attend the class. There were not enough seats in the room so some of the students helped carry stools from the nurses' room. An intern received a call on his phone and he left without returning to the class. It was almost a quarter to two when the class began. Most of the students took notes in their note books except for Carl who had his tablet computer. Chelsea was in-charge of recording the teachings for the first two weeks, so she also

wrote on a form that Shirley provided in their orientation folder. I shall describe the contents of the class in the following chapter. At three o'clock, Dr. Meng was reminded on the phone that she had to attend a meeting. The students thanked her before she left and stayed to restore the room. Chelsea gave the teaching record form that she wrote for others to sign their attendance. They then went up to the general medical ward where Maria was waiting for them. Maria told Caitlin that the cardiologist had just seen her patient and had made some recommendations, and she wanted Caitlin to follow them up. Then she gave the students the second half of her orientation which lasted till a quarter before four, the contents of which were described in the previous chapter.

After the Orientation

The clerks in Dr. Han's team became a bit anxious after Maria's orientation because they had to complete their progress notes within fifteen minutes. Caitlin was even more so because she also had to look at the cardiologist's reply to the consultation. However, after Dr. Meng's class earlier in the afternoon, the students had a better idea what to write and they immediately sat down in front of a computer each in the conference room to type away their notes. Chelsea had written a bit after lunch, mainly about her own visit to the patient in the morning and during the ward rounds, but she reorganized the information according to the format Dr. Meng taught.

Once again, the students encountered problems with using English in the writing. Chelsea and Craig were able to finalize their progress notes and send them off before the allotted time. Dr. Ray had already dealt with the cardiologist's recommendations about Caitlin's patient but the latter was struggling with her progress note. Chelsea went over to help; she read through Caitlin's writing, thought it was reasonably well done, and encouraged her classmate to end it. Maria also told Caitlin that it was normal that her writing would not be perfect at the beginning because she was a student and that was why they were doing their clerkship at the hospital, so that they could learn. She comforted her that Dr. Han would look over and correct it for her. Chelsea received a call from Shirley who wanted to remind her to arrange for someone to present at the Professors Rounds the following day. She went around asking the interns and clerks on her team if they had a suitable case. The clerks felt that they were too new and their cases were rather normal, and asked the interns for help. Isaac was on duty that day, so he requested to be relieved of the extra work. In the end, Ivan volunteered. He called Shirley to find out what was required of him. Chelsea returned to her computer to do her own work. Following Dr. Han's suggestions, she looked up more information about the risk factors and differential diagnoses of acute pyelonephritis. She discovered an article that contained the information and found that she had missed out many items on it. Chelsea did not know which local contraceptives contained spermicides and none of her classmates knew either, so she asked Maria. The latter did not give

her the answer directly but assisted her in looking up the information from the internet. Armed with a new list of questions that Dr. Han put to her and which she gathered from the new data, Chelsea went to see her patient but the latter was asleep. So Chelsea went back to write up the on-service note but she had to leave certain information blank. Caitlin had also finished her progress note by then and she invited Craig and Chelsea to listen to her patient's heart sounds. Carl overhead what was happening and joined them. The old woman was sleeping but her daughter woke her up. When the patient knew who the visitors were, she smiled and praised them for being "so young and yet so clever". Chelsea replied politely in broken Taiwanese and Carl took over the job as interpreter. After the students had listened to the patient's heart sounds, they thanked the patient before leaving. The students then discussed their findings and Caitlin filled in her classmates with what she had read up about the characteristic sounds of a rheumatic heart and the electrocardiogram (EKG) findings for sick sinus syndrome. They studied the patient's EKG together for a while.

On Duty

Chelsea was on duty that evening and she looked up the duty roster on the white board in the conference room for the names of others who were also on-duty that day. She informed Isaac that she was on-duty with him and requested him to inform her when they have new patients.

Then she asked her classmates on both teams if any of their patients could be problematic. Claire told her about the more serious patients in her team. The meal trolley arrived and Chelsea went to pick up her dinner that was packed in a bento box. She put it aside as it was still early, and continued writing her on-service note. She had just began eating her dinner which contained a braised chicken thigh, three side vegetables, and rice at around 6 p.m. when Isaac poked his head into the conference room and told her that they had a new patient. The latter was dressed in green scrubs. Chelsea sighed as she put away her bento box before she went out to the nursing station to join Isaac. The latter shared with her that he always made sure that he had eaten before he began his duty but Chelsea protested that she was not used to eating that early. Isaac remarked that they have to change certain aspects of their life to "survive" in the hospital and taught her to prepare some food for snacking later on in the evening. A nurse passed Isaac the patient's chart and the latter went through the patient's history at the ER with Chelsea while he jotted some notes on a piece of paper. He taught her how to interpret the laboratory data. It was a case of pneumonia. Isaac looked at the patient's chest X-ray, pointed out the lesion to Chelsea, and went through the patient's past records in the chart. It was the patient's third admission. Isaac told Chelsea that he would be taking the history and conducting a rough physical but she could stay after that to ask more questions and perform a more thorough exam. He informed the duty resident through the phone about the patient before he and Chelsea went to look for the patient's

room. While Isaac and Chelsea were standing outside a door, a nurse directed them to the right one. They sterilized their hands with alcoholic gel before they entered the room.

Isaac introduced himself to the patient and his wife. The patient was a tall and thin man in his late sixties and he wore a nasal cannula that delivered oxygen into his nostrils. He laid with the top part of his bed raised and propped up with two pillows. Isaac stood on the patient's left side, next to his wife, while Chelsea stood to the right across from him. He opened the patient's chart and took out the piece of paper with questions he had jotted down earlier, and he began asking questions as he took notes. He spoke mainly in the Taiwanese dialect, only using Mandarin Chinese for some medical terminologies. The patient coughed often while he spoke and spat into the tissue papers his wife handed him. Isaac asked to see what was in the tissue the first time the patient did that, and the latter opened to show him a glob of thick yellowish phlegm. Chelsea had a call at that moment but she apologized to the other party that she was busy and hung up quickly. A younger man entered with a backpack and carrying two packets of tissue papers on his hand. It was the patient's son and he placed the things down and stood at the foot of the bed. When Isaac was done, the patient asked to be given intravenous fluids and medications. Isaac replied that he needed to perform the physical examination first. He started from the head, eyes, mouth, neck, and then the chest. He was quite thorough. For the chest, he pulled up the patient's shirt to listen to his heart and lung sounds with his stethoscope, first in the

front and then at the back with the patient slightly bent forward. He voiced out his findings to Chelsea in a soft voice in English, "crackles", when he had his stethoscope on the patient's back in the right lower and middle lung fields. Later Isaac placed both his palms on the back of the patient at that level with his thumbs touching and asked the patient to say "Eee" as long as the latter could. He asked the patient to repeat the action and told Chelsea in English, "egophony".[8] Then he placed his left palm horizontally on the patient's left side and tapped his right middle finger on that of his left a couple of times. He moved his palm up the patient's back while tapping and repeated the motion on the patient's right side. Next Isaac asked the patient to lie back and told Chelsea to lower the top part of the bed as much as the patient could tolerate, and he proceeded to examine his abdomen, hands, and legs, but he did not conduct a neurological examination. He pointed out to Chelsea the nicotine stains on the patient's fingers. When he was done with the physical exam, he thanked the patient and told him that he would prescribe the intravenous fluids and medications for him. When they opened the curtain, the patient's wife inquired about his condition. Isaac replied that he was only the intern doctor on duty and that she would have to ask the attending physician the following morning. Isaac and Chelsea washed their hands at the basin outside the door and returned to the nursing station. Isaac asked the latter if she had any questions and they talked on their way back about the chest findings.

[8] Egophony is a technique to test for consolidation or fibrosis in the lungs by getting the patient to produce a long "e", which will be heard as an "a" through a stethoscope that is placed over an affected area.

The resident on duty that evening, Dr. Rose, arrived at the nursing station a few minutes later. She sat down in front of a computer, opened the patient's chart, and asked about the case. Isaac and Chelsea stood up beside her and the former made a fairly detailed report. Dr. Rose asked Isaac and Chelsea a few questions about the patient's history and physical exam, particularly about the breathing pattern and findings of the lungs. She looked through the patient's latest chest X-ray and previous ones, and then summarized the case. She asked Isaac for the differential diagnoses of pneumonia, the reason for admission, if it were community- or hospital-acquired pneumonia, the possible causative organisms, and management. Isaac was able to answer most of the questions, winning Dr. Rose's praise. Dr. Rose then went to the bedside with Isaac and Chelsea trailing behind him. She checked the patient's pulse while talking to him, examined his chest in detail, inspected his hands and feet briefly, and asked to see the patient's sputum. Dr. Rose explained to the patient and his family the condition, and outlined the intended treatment plan. She answered their questions, advised the patient to stop smoking, and encouraged him to rest and drink more water. She then left the room and told Isaac that she would write out the new patient's admission orders, so the latter only had to complete his version of admission note. Chelsea asked if she had to write the admission note and Dr. Rose replied that it was not required of her, especially since it was her first week. So Chelsea went back to the conference room where most of her classmates were. It was 7 p.m. and Cynthia had an empty

food box from the convenience store in front of her. Chelsea wondered out loud what she should do with her cold dinner. A nurse who happened to enter the room to pick up a printed paper told her that she could re-heat it in the microwave in their room. She led Chelsea to the nurses' room, unlocked the door, and pointed out the machine to her. Chelsea returned after a couple of minutes and sat down to finish her dinner. While eating, she shared with her classmates about what happened with the new patient, remarking on the H&P skills of both Isaac and Dr. Rose. Then she looked through her patient's electronic chart and checked if the result of the urine culture had been issued. Half an hour later, Chelsea went to see her patient again. She was a bit embarrassed when inquiring about her patient's sexual life but the latter answered her in an easy and natural manner. Chelsea conducted a more thorough physical exam and returned to the conference room to complete her on-service note. When she did, she announced happily to her classmates her feat. It was greeted with cheers by those who had also accomplished the task and groans by those who had not. Chelsea then read up on pneumonia from her pocket handbook. She remembered Dr. Meng and Maria's advice about being alert to happenings at the nursing station while she was on-duty so she went out. Chelsea studied the new patient's admission orders and was amazed that Dr. Rose and Isaac had already completed their admission notes of the new patient. She compared what they wrote and marveled at their observations and detailed records of the patient, for example, that the patient was mildly dehydrated as evident from his

poor skin turgor and was breathing through pursed lips and using his accessory muscles during breathing. Chelsea wondered out loud when she could be as good as them.

A nurse approached Chelsea and asked if she was the duty clerk. She told the latter to see a patient who was experiencing itchiness. Chelsea jumped at the opportunity of handling her first complaint while on duty. She went to look for the patient, who was a plump, middle-aged woman who was accompanied by her daughter. Chelsea asked the patient what the matter was and the latter showed her some skin rashes around her waist. The patient told her that she often had the problem which was usually precipitated by contact with seafood. She had eaten a bowl of Cantonese congee her daughter bought her for dinner but her daughter had specified when she was buying the food that she did not want seafood in it. Chelsea nodded and told the patient that she would prescribe some medicine for her. The patient told Chelsea that she was allergic to certain medicines and reminded her not to prescribe those. Chelsea's face turned red very briefly when she realized that she had forgotten to read through the patient's chart before seeing her, and she promised the patient that she would be careful and avoid those medicines. She returned to the nursing station and looked up the patient's electronic chart for her allergy history, reprimanding herself softly about her oversight. She copied the names of the medicines on a piece of paper. Chelsea then took out the formulary, turned to the section on medications for the skin and examined each entry carefully. After about ten minutes, she shut the formulary and declared that

she did not know what to do. The nurse who had told Chelsea about the patient advised her to look at the patient's previous orders to see if she had been given medications for the problem before. Chelsea was very grateful to the nurse for the advice. She looked up the patient's medications in the electronic chart but did not find what she was looking for. Then she went through the patient's old charts which was a hefty thick pile. It took her half an hour to look through the orders and notes, and she wrote down some medications that were used. Finally, she decided that she would follow one of the prescriptions. She called Isaac to inform him about the patient, what she thought the matter was, and her choice of medication. The latter returned to the ward to inquire Chelsea carefully about her findings. Chelsea tried to describe the appearance of the skin lesions and Isaac gave her a crash course on dermatology terminologies. At the end, Chelsea decided that the patient had "multiple pin-head-sized erythematous papules". Isaac looked through the patient's electronic and paper charts very quickly and went to the bedside with Chelsea to see for himself the skin lesions. He agreed with the latter to treat it as food allergy and taught her what to prescribe. He had a call and had to leave for the other ward. Chelsea tried to prescribe the ointment on the computer but could not find the medicine. She struggled for a while before she called Isaac for help. The latter did not know either and he told Chelsea that she would have to call Dr. Rose. Chelsea was terrified by the idea of calling a senior resident and she wrestled with it for a while. Finally, she looked up Dr. Rose's phone number

and called her. She reported to the latter about the patient, what Isaac had directed her, and her problem. The latter instructed Chelsea what to do over the phone and reminded her to add a "stat" for the order so that the ointment would be delivered immediately. Chelsea completed the order in less than a minute and she breathed a sigh of relief when she hung up. She compared her experience to "taking a plunge in cold water", that the mental barriers before the execution of the act were much more frightening than the experience itself which was actually over in a very short while, and that even though the process was a bit tumultuous, it was quite painless. Chelsea informed the nurse about her order and asked if there were anything else she had to do about it. She was told "No", so she proceeded to write the on-duty note. She was able to apply what she learned from Dr. Meng's class on writing progress notes that afternoon and Isaac's crash course on dermatology, and completed the record fairly quickly. Chelsea looked at her watch after she finished and noted that it took her one-and-a-half hours to handle a simple complaint. Isaac returned to the ward just then and she showed him how to operate the computer system for prescribing external medications.

Chelsea was about to go into the conference room to take a sip of water when her phone rang. It was a nurse from the back station who called about a patient who had a cough. Chelsea looked at her watch and sighed when she saw it was half past nine already. She hurriedly drank some water from her water bottle before she rushed to the back station. This time, Chelsea

remembered her lesson and looked up the patient's electronic chart quickly to ascertain his cause of admission. She jotted down some questions and looked around for a tongue depressor but there was no one at the station. Chelsea went around the ward to look for a nurse and finally found a male nurse at the bedside in one of the rooms after a few minutes. The nurse showed her where their medical supplies were kept and directed her to the patient's room. The patient was a middle-aged man with diabetes under Dr. Han's care. He told Chelsea that he had a sore throat after waking up that morning, probably because he was not used to sleeping with air conditioning and it had developed into a slight cough. Chelsea asked him some questions before she examined his mouth with a penlight and tongue depressor. Then she listened to his chest through the patient's gown. Following Isaac's example of conducting chest examination on the new patient earlier, Chelsea also percussed the back and tested for egophony. She asked if the patient was allergic to any medications before telling him that she would give him some cough medicine. She went to the nursing station, looked through the patient's old charts, and checked the formulary for cough medicines. After a while, she called Isaac to report to him about the patient. The latter asked if the patient had fever and Chelsea realized that she had missed out that piece of information. Isaac told her to either look up the nurse's record, ask the nurse, or examine the patient herself, and report back to him. He also told her to check the color of the patient's sputum. Chelsea did not know where to look for the nurse's record and she could not find the nurse either.

She felt a bit embarrassed to go back to see the patient but reasoned with herself that she had to. So she returned to ask the patient if he had fever, checked his skin temperature by touching his forehead with her palm, and asked to see his sputum. The patient asked about his medicine and Chelsea replied that she had not decided yet what to give him in an apologetic tone. She reported her findings to Isaac but this time the latter disagreed with her choice of medicine. Isaac told Chelsea to prescribe an ordinary cough syrup instead of an antitussive pill the latter had chosen from the formulary. Chelsea hung up the phone and consulted her formulary for the cough syrup. She was not sure how much to give so she followed the recommendation in the formulary. Then she wrote her on-duty note but she had difficulty determining what to write for the assessment. In the end, she had to consult Isaac again and the latter suggested "acute upper respiratory tract infection" for the diagnosis of the patient's problem. Chelsea completed her on-duty note and checked her watch again. She was quite happy that she had only spent an hour on the patient's complaint this time. She returned to the front of the ward and saw Isaac at the nursing station. She thanked Isaac for his help and told her that she was off duty already, since it was well past ten o'clock. The latter told her to go back and get some rest. Chelsea went into the conference room to find that it was empty except for Caitlin. The latter decided to leave with her and Chelsea shared with Caitlin her experience of being on-duty for the first time. She mused about how long it had taken her to handle two simple complaints but she was very grateful to Isaac and

Dr. Rose for being so patient with her and vowed to be nice to her juniors later on when she was an intern and resident.

Improving Case Presentations

The following day after the morning activity, the students were again busy with preparation of the ward rounds an hour later. With the input and feedback from Dr. Han's questions and comments, and Dr. Meng's class on writing admission note the previous day, Chelsea revised her case presentation during the ward rounds on her third day of clerkship. It was more concise but detailed. She learned to use some English medical terminologies from the references in English that she had been reading up. It went as follows:

> Ms. Lin is a 39 years-old woman who was admitted due to fever up to 38.6 degrees Celsius and chillness, nausea, poor appetite, painful micturition, and flank pain for one day under the impression of acute pyelonephritis (APN). At the emergency room, she was found to have leukocytosis with left shift: WBC 12,800, segment 92%; and bacteriuria. Upon admission, she was acute ill-looking, her vital signs were: body temperature 38.4 degrees Celsius, blood pressure 130/90 mmHg, pulse rate 102 per minute, and respiratory rate 22 per minute. Her physical examination was unremarkable except for left costovertebral angle knocking pain. Her symptoms subsided after two days with intravenous ciprofloxacin and fluids, and her WBC and UA returned to normal. Blood and urine culture showed *E. coli* but the sensitivity tests are not out yet. The abdominal CT with contrast showed no structural abnormalities, renal stones or abscesses. Reviewing her past history, she had an episode of UTI five months ago, and was treated at our OPD with oral antibiotics. Her risk factors for APN: she is married, but does not use spermicides.

Dr. Han looked a bit astonished at the sudden ending of Chelsea's presentation and asked about the patient's occupation as a risk factor. It was Chelsea's turn to be perplexed because after yesterday's questioning by Dr. Han upon her verbal report, Chelsea thought that he had discredited her postulate that the patient's long working hours and few short breaks were the cause of her illness. Upon hearing Chelsea's reasoning, Dr. Han could barely suppress his grin. He tried to keep a straight face as he told Chelsea that there could be more than one cause to a person's ailment. Then he recounted the patient's risk factors, including the fact that her mother also had a history of UTI. He explained to Chelsea patiently that he already knew that the patient was married but the focus of his questions yesterday was the frequency of sexual activity, the method of contraception, and the possibility of pregnancy in the patient. Next Dr. Han asked Chelsea to outline her treatment plan. Chelsea became somewhat flustered that she had forgotten to add that piece of information in her report. She replied that she planned to continue the intravenous antibiotic for seven days. When Dr. Han questioned further what she would do after that, Chelsea was taken aback. Dr. Ray, who was seated next to Dr. Han and facing Chelsea, slid his chair behind the attending to give her a hint by making a gesture of putting something into his mouth and chewing. His good intentions were to no avail so Dr. Ray replied for Chelsea that the patient's antibiotic would be changed from intravenous to oral and if the patient were afebrile for two days, she would be discharged. Dr. Han continued to ask Chelsea her plans concerning the

patient's intravenous fluids. By now, Chelsea had gotten the hint and she replied that since the patient's appetite and fluid intake were normalized, she would discontinue the intravenous fluids. Dr. Han nodded with a satisfactory look on his face and Chelsea heaved a sigh of relief. Seeing her expression, Dr. Han consoled Chelsea to take it easy but reminded the students to think about and always keep in mind the patient's discharge plan the moment he or she was admitted. Before he ended, Dr. Han corrected Chelsea's use of the words "chillness" and "costovertebral angle knocking pain" in her report, saying that they should be "chills" and "costovertebral angle tenderness" instead. He gave Chelsea a smile of encouragement and told her to keep up the good work before he went on to the next patient.

Afterwards, Chelsea confessed to me that she was slightly confused about what Dr. Han expected from their case presentations even though she found him very friendly and supportive, and she liked his humor. She described her learning experience as "hitting cockroaches", i.e. she could not aim accurately and would miss the point most of the time. Later, I overheard Isaac complaining in the meeting room after lunch that he did not know what Dr. Han wanted in their oral reports because even though he had spent a lot of time preparing for them, the attending found numerous faults in his presentations. Isaac said that he had made his case reports in the exact same manner as he did the previous day and while Dr. Han did not say anything about them the day before, the latter kept interrupting him with questions that morning. Maria

explained that it was because Dr. Han expected them to improve day by day and so what was acceptable on their first day would not be so the following day. She encouraged Isaac not to be contented about his performance but to pay attention to and learn from how others report and from Dr. Han's comments and suggestions to others and him. Caitlin, who was also listening, commented that it felt like one was running after a train that was slowly moving away from the platform, that one could not rest but had to constantly keep going. Maria comforted the students that the learning process might seem slow for them at the initial stages but she assured them that it would progress faster and easier later on. However, she warned that their learning curve might not be smooth but might sometimes fluctuate up and down, so they should not be discouraged if they seemed not to be improving, be at a standstill, or even worse, be regressing.

The Next Few Patients

Chelsea's patient was discharged the following week and during the period, Chelsea got to know her patient and her family very well. She became well-versed in the typical presentations, diagnoses, differential diagnoses, and management of simple and complicated urinary tract infections and acute pyelonephritis. She had an opportunity to perform an electrocardiogram on one of their new patients under the tutelage of Isaac and saw Dr. Ray carry out a peritoneal tapping for Craig's patient to remove the ascitic fluid from his abdomen. She began practicing

speaking Taiwanese to her classmates and Claire joined her. Later, Chelsea attended an informal class on medical Taiwanese every Thursday evening at RATH that was organized by a young doctor. She showed me a thick book that the doctor had compiled of common words and phrases in medicine in both Mandarin and Taiwanese. When Chelsea's patient was leaving the hospital, she went to the nursing station to thank Chelsea for her care and the novice was very touched.

Chelsea's next patient was a thirty-three years old construction worker who was admitted due to cellulitis, a bacterial skin infection, on his left lower leg and it was suspected that he had diabetes. Chelsea found it difficult to talk to the patient because he was rather taciturn. She shared with me that she often had to think about conversational topics at the end of each day to converse with her patient but usually she would run out of things to say after a few minutes. Later, she thought of asking her patient to teach some Taiwanese vocabulary, but still she could not coax a lot of words out of his mouth. Once after a particularly unproductive conversation session with her patient, Chelsea returned to the conference room looking dejected. She sighed out loud as she sat on a chair around the central table and complained that she was at the end of her tether. Caitlin told Chelsea that she had looked up the notes from their first year course on communication skills and applied some of the techniques taught, such as being at eye-level with the person and repeating the last word the person said. Carl said that he would observe how

others do it, especially Professor Tang during their Clinical Humanities Discussion and his teaching attending.

Gradually, the students begin to discover some "facts of life". Not long after her second patient was admitted, Chelsea told me that she discovered that he had lied to her about not smoking or drinking, because the previous evening, when she left the hospital at nine o'clock, she saw him outside the convenience store next to the hospital with a cigarette in his mouth and a can of beer next to him. When the patient saw her, he just gave her a polite smile and a nod. After getting over her astonishment that her patient could choose to deceive her about his habits, Chelsea concluded that he probably told her what he thought she wanted to hear. She decided that from then on, she would not trust what patients tell her.

Chelsea's third patient was a middle-aged man with pneumonia who seemed rather well on admission and could still walk around, but on the next day his blood pressure dropped dangerously low even though he was still conscious. Dr. Ray had to insert a central venous catheter from the patient's neck but encountered problems finding his internal jugular vein. During the process, the patient complained loudly about the pain and asked repeatedly when it would be over. After attempting unsuccessfully for half an hour, Dr. Ray was perspiring profusely and the patient was turning nasty. Maria was at hand to comfort the patient and Dr. Ray got her to call the chief resident, Dr. Rick, for assistance. Dr. Rick appeared almost

immediately and without a word, donned a sterile gown and gloves. He instructed Maria to adjust the bed while he positioned the patient's head, felt around the side of his neck, and inserted the large hollow needle with one smooth quick movement of his hand. When Dr. Rick saw dark-colored blood flowing into the syringe, he rapidly and skillfully proceeded to place the catheter in the patient's vein assisted by Dr. Ray. It was over in a few minutes, after which Dr. Rick peeled off his gloves, threw them into the medical waste bin, and walked out, again without saying a word. Dr. Ray cleaned up the mess and Maria stayed behind to placate the patient. The patient asked the latter about Dr. Rick's identity and praised him by saying that he had never seen a doctor as clever as Dr. Rick. Chelsea followed Dr. Ray to the nursing station where Dr. Rick was typing up his note. After Dr. Ray had washed his hands and sat down next to Dr. Rick, the chief resident shared with him what he thought the problem was. He emphasized the importance of placing the patient in the right position so that the anatomical structures would be properly aligned, and drew a diagram on the back of a piece of paper to illustrate the location of the internal jugular vein in relation to the adjacent muscles and blood vessels. Then he disappeared as silently as he came. "Cool", was Chelsea's comment about Dr. Rick when she recounted to her classmates the event later. She added that Dr. Rick's nickname in the hospital was "Rick One Shot", referring to his skill in inserting catheters and drawing blood. However, in terms of the entire experience, Chelsea described herself as "being pulled up by the roots". I

asked her to elaborate what she meant and she explained that she felt that she was not a student anymore because “patients may die!”

Conclusion

The account above represents some of the essences of a neophyte’s initial experience at SOTH that I had observed during my fieldwork which I shall analyze in the next chapter. When faced with the opportunity to finally be able to apply what they have learned for four years in college, most students experienced a sense of scarcity of their practical knowledge, perhaps regret that they had not studied well enough in the past, and felt quite lost at what to do or how to proceed with their learning.

Chapter Three: Trying Not to Be a "Roadblock"

見山是山，見山不是山，見山還是山
See the mountain as a mountain, see the mountain not as a mountain, see the mountain still as a mountain
– Qing Yuan Wei Xin[1]

Medical students in Taiwan describe themselves as "roadblocks" during their clerkship.[2] In what ways are medical students "roadblocks"? What obstacles do they face during their clinical training? How do they know and learn to navigate their way in the hospital? In this chapter, I shall examine the problems medical students encounter when they first embark on their practical trainings in hospitals, how they overcome the hurdles, and the different forms and extents of participation. I have to emphasize though, that clerks at SOTH are not typical "roadblocks" because of the supervision they receive and the participation they are allowed.

Trying not to be a "Roadblock"

To understand why medical students are "roadblocks", let us recall what happened to Chelsea and her classmates during the first few days at the hospital when they were left on their

[1] The saying was abbreviated from several Buddhist records during the Song (960–1279 C.E.) and Ming Dynasties (1368–1644 C.E.) about the Zen master 青原惟信 (n.d.) who shared the three stages of his meditation practice.

[2] During my days, we had not coined nicknames for ourselves as clerks yet, but I immediately understood what it meant the moment I heard the term from the students, for I had felt like one too when I was a neophyte in medicine.

own. What stands out from the account in the previous chapter is the numerous periods of relative inactivity from not knowing what to do, the going back and forth between studying the patient's disease and looking up supplementary information, and the seemingly lengthy time it takes to accomplish things for the neophytes. From the students' point of view, their main obstacles at the beginning of their clinical training are the practicalities, such as where things are, where to go, and what to do at what time. Concerning the former, the students need to know where things are placed or stored, such as patients' old charts, forms for various tests, paraphernalia such as tongue depressors, measuring tapes, and surgical masks; medical supplies and equipment like dressings, various tubes (e.g. nasogastric tube or Foley catheter), and the electrocardiogram machine, etc. As for where and when one should be, hospitals in Taiwan issue monthly calendars with all the teaching activities listed on it beforehand to all those involved. Despite the brief tour of the hospital given by the secretary on their first day, I observed how students still encountered problems locating the venue for their activities or classes during the first two weeks. Other practical issues medical students encounter initially include knowing how to operate the computer and imaging systems, such as where and how to type out the consultation request, how to write out a routine or urgent order, how to prescribe different forms of medicines, e.g. topical, oral, or intravenous. Fortunately, for those Generation Y or Millennials who are technologically savvy, I noted that they got use to the hospital computer

systems very quickly and if they encountered any problems, they could usually solve it by asking one another for help.

The newcomers' next chief concerns are the technicalities, which encompass all aspects of their clinical work. We recall from the contents of the orientation the students were given on their first day that they were told of their daily schedule but not about what they should do in detail, except for very broad and vague things like providing "total care" to the patients and doing H&P (history taking and physical examination), etc. Despite innovations and advances in the teaching of medicine, there is still a huge gap between how medicine is traditionally presented in the textbooks and taught in medical schools, and what clinicians encounter in actual practice. Medical textbooks are separated and classified according to various subjects or specialties such as internal medicine or gynecology, and subspecialties like neurology or orthopedics. Topics within medical textbooks are mainly listed and presented according to disease categories for example, pneumonia, Down's syndrome or multiple sclerosis. In a real life clinical encounter, however, a patient will usually not come into the emergency room telling the doctor, "I have lymphoma" or "I am diabetic", unless it is a chronic or repeated condition. Traditionally, the medical curriculum is divided into subject courses such as surgery, radiology or chest medicine, and students are taught about the causes and risk factors, symptoms and signs, diagnoses, tests and examinations, treatment, and prognoses (probable outcome) for each

disease, but because all these is dry information, students struggle to find relevance and meaning to what they are required to study. Then when they go to the hospital, they discover that they have to reverse the order of learning, as Dr. Meng mentioned on the first day: they are presented with symptoms and they examine for signs, then they have to deduce the diagnosis and decide on a treatment plan. Fortunately, the disjuncture between learning and practice was addressed by Harvard Medical School in the mid-1980s with the New Pathway in General Medical Education course that uses case-based learning whereby students are provided with progressive information about a patient and questions to assess their understanding of each (B. Good 1993; B. and M. Good 1993). This approach is much closer to actual clinical situations and believed to encourage self-directed learning.[3] It has been adopted by most medical schools in Taiwan, including PEMS and REMS,[4] and students at REMS were given courses in clinical skills and had practiced doing physical examinations on simulated models and on one another before their clerkship. However, in the hospital, students are still at a loss about what to do initially, as in Chelsea's situation with her first patient.

[3] M. Good (1995) reported that the first group of students who participated in the New Pathway curriculum fared only just as well as their classmates who underwent the traditional teachings in terms of their medical knowledge but they were better in dealing with psychosocial issues of their patients.

[4] Some local medical educators argue that problem-based learning is adopted to various extents in different medical schools here.

The Nature of Clinical Practice in Taiwan

Let us review what transpires when a medical student has a new patient. For the sake of convenience, I shall use the feminine pronoun for the medical student and the masculine pronoun for the patient. We note that the student will look through the patient's medical records, both current and past, to gain a basic understanding to why he was admitted. Then she will see the patient to obtain the history, which includes finding out about his chief complaint, what happened before the admission, and his past medical, social, and family histories. She also has to ask about other symptoms that the patient may have and examine him from head to toe. Besides the H&P that constitute the patient visit, the student has to find out about the results of the patient's laboratory tests and diagnostic images done before the admission. With all these information, she has to think about possible diagnoses and further tests she can do to confirm which one it is. She has to also provide medications to relieve the patient's discomforts and treat the disease. Finally, she has to record all these in the chart. As the condition of each patient is different, the problem novices face during the history taking is knowing which questions to ask and in what order. If one were to follow the textbook list of questions in history taking and conduct a complete physical examination, one might take two hours. This is not possible for patients who are in distress or discomfort, and even in those whose conditions are stable, they may not want to answer so many questions or tolerate being handled and probed for a long time.

Even if the student does a complete physical, she requires skills in conducting it correctly, ability to distinguish the pathological from the normal, and keen observation to notice what is wrong. Moreover, there is the cultural issue. In Taiwan, most physicians do not examine the patients' sex organs or perform a "digital" (anal examination) unless the patient specifically complains about problems in those places. Certain subjects are also not usually discussed in the clinical interview. An example is the story by the senior teaching physician during his residency of seeing a fifteen-year-old girl at the emergency room who presented with lower abdominal pain. He could not figure out what was wrong with the patient until he suddenly had "an epiphany" to ask about her last menstrual period and it turned out that she was pregnant.

On average, students usually take eight to twelve hours to write up an admission note at the beginning but the time decreases to four to five hours later on. As for writing the admission order, the students are not expected at the beginning to complete it because the orders have to be implemented as quickly as possible after the patient's admission so that he will receive his medications, tests, and care. Most clerks start with learning how to write a "stat" (urgent) or one-item order, for example to change or stop a medication, or to prescribe a laboratory test, diagnostic examination, or special procedure. They may also be allowed to write the discharge order which is shorter and simpler, and which can be done on the day before. Students will practice until they can write a proper admission order for it to be executed in time, and it usually

is about commonly seen diseases or conditions. Each day, the students have to write a progress note about their old patients. On average, they take one and a half hours initially to complete the task for one patient but towards the end of their clerkship, they only require about half an hour.

Another aspect of a student's work and learning at the hospital is being on duty after work hours and during the weekends. At SOTH, medical students are assigned duties about every three days and one weekend per month. On weekdays, their duty hours are between 5 to 10 p.m. We see that the work for our protagonist on her first evening on duty is very different from that during the day. Students are normally informed about a patient's complaint via the telephone. If the student does not already know the patient, she needs to look up the patient's medical records to gain a basic understanding about the patient before she goes to see him. After hearing from the patient what the complaint is, she often has to perform some physical examinations to assess the state and severity of his condition. Actually, the key is to distinguish whether the complaint is critical or dangerous. If it is not, then the student has to determine what to do, and it usually involves prescribing a medication to relieve the patient's condition or some tests to ascertain the situation. When prescribing, she has to know the brand name because a medicine may be manufactured by various pharmaceutical companies and sometimes there are different dosages and forms too. However, at school, students are taught the generic names of medicines in their pharmacology classes. At this stage of her career, Chelsea is not yet aware of the impact of the

National Health Insurance on what medicines and tests she can prescribe to her patients. The management of patients' complaints is something beginner physicians have to learn on the job. It is not specifically taught at school or during the day in the hospital, and we saw how it was the nurse who mainly educated Chelsea about what to do. However, to patients and their family, they care very much about having their complaints managed well, even if it were something as small as a skin allergy or insomnia. This is one of the disjuncture between the concerns of layperson and professionals about health.

Besides medical knowledge, a novice also has to learn certain techniques at the hospital, for example venous puncture (to draw blood for tests), inserting intravenous catheters, changing wound dressings, inserting nasogastric tubes and Foley catheters, doing an electrocardiogram, etc. As the case manager mentioned in her orientation, a student first has to observe how it is done, then she has to be able to explain verbally the steps in the process before she is allowed to actually perform it.[5] Neophytes in medicine are often very eager to perform these but their teachers and seniors will advise them to wait till their internship when they have to do so many of them every day that these become chores or "scut work". Their rationale is that these are skills that can be refined through practice but also will regress through disuse, and students should

[5] This is in great contrast to earlier times (including mine) when students "see one, do one, teach one".

focus on gaining their medical knowledge during their clerkship instead. Therefore, some experience in observing and performing the procedures should be adequate at the clerkship stage.

Last but not least, let us look at how the above tasks are recorded in the medical charts and communicated to other colleagues in the form of case reports.[6] The skills of chart writing and oral presentation is highly valued in medicine because it epitomizes one's medical knowledge about the patient's condition. There are certain general structures to writing admission notes and making oral reports, and these are things that students have to learn at the hospital. The following is taken from Dr. Meng's introductory class to chart writing.

The Art of Chart Writing

According to Dr. Meng, the purposes of keeping a written record about one's encounter with a patient are: for registering information obtained and observations by various health care providers, communicating between medical professionals, training in logical thinking and problem solving, and also legal significance. The sections in an admission note for patients in internal medicine consist of: the chief complaint, history of present illness (HPI), past medical history including medications and allergies, social history, family history, review of systems (ROS), physical examination, laboratory data including images, assessment, and plan (the latter

[6] Hunter (1991) did an admirable job of analyzing these aspects in detail using narratives.

two are usually known as A&P). The chief complaint is a concise statement about the patient's presenting problems and their duration. Most students often miss noting the latter. Since the chief complaint should be the patient's own words, one has to record it in lay expressions rather than professional terminology, for example "redness and swelling" instead of "erythema and edema", and "shortness of breath" as opposed to "dyspnea". The history of present illness one of two most important sections in the admission note, the other being the assessment and plan. The opening statement of the HPI should include information about the patient such as the age, gender, occupation, previous health status of the patient, presenting symptoms, and reasons for admission. The problems can be grouped together by either chronological sequence or related symptoms. The latter include the location, quality, quantity, and exacerbating and relieving factors of the symptom, which make up the mnemonic, LQQ-OPERA.[7] The HPI should be presented as if one were "telling a story", and one can "sell an idea" of what problem the patient has by giving relevant clues but not naming it directly. In Dr. Meng's class, she borrowed the analogy used by a young attending that if one wants to give an apple to another person, one does not identify it directly but will describe it by saying that it is red, looks bright and waxy, smells nice, and is crunchy on biting, so the other person will know that one is talking about an apple.

[7] The mnemonic was introduced by an eminent professor in cardiology, Dr. Jui-Sung Hung, in Taiwan and it stands for (1) location, (2) quality, (3) quantity or time course, (4) onset mode, (5) precipitating factors, (6) exacerbating factors, (7) relieving factors, and (8) accompanying symptoms. In other countries, the mnemonic OPQRST or others may be used. OPQRST stands for onset, provocation or palliation, quality, region and radiation, severity, and time.

The HPI should include both positive symptoms and negative ones, i.e. problems which one may think about that are related to the patient's condition but which the patient does not have, and should also describe changes in the patient in the emergency room.

In the past medical history section, one should include details of the health problems the patient had before. For example, if a patient has diabetes, one has to find out when it was diagnosed, if it were well controlled, the medications used, and complications from the disease. The section should also include a list of the patient's medications and allergies. The next two sections are the social history and the family history, and students in Taiwan often mix them up. The former concerns factors of the patient's life that may affect his health, such as living arrangement, occupation, and use of substances such as alcohol, betel nut, cigarette (tobacco), and drugs (mnemonic: ABCD), while the latter involves genetic diseases the patient's blood kin has, e.g. heart disease, stroke, diabetes, and cancer. The review of systems (ROS) is usually performed at the end of the history taking where one goes through common symptoms from head to toe to make sure one does not miss out other problems the patient may also have.

The content of the physical exam depends on the problems the patient has but there are also general items one should note in a systematic examination using inspection, palpation, percussion, and auscultation. It is recorded in the chart with a statement about the patient's general appearance first, followed by his vital signs such as the body temperature, pulse,

respiratory rate, and blood pressure, and then findings of major organ systems from head to toe, including the HEENT (head, eyes, ears, nose, and throat), chest, heart, abdomen, extremities, and neurological system. In this section, one describes only the signs, i.e. objective states either noticed or elicited by others, and not symptoms, which are self-reported problems by patients that have been recorded in the previous sections, notably the chief complaints, HPI, and ROS. In Taiwan, a common mistake by health professionals is to mix up the words "pain", which is a symptom because it is subjective and not directly observable by others, with "tenderness" which is a sign that can be elicited during the physical exam, for example using "rebounding pain" instead of "rebound tenderness".

The physical examination section is followed by the laboratory data, which includes the results of radiological tests. One should compare the results with the patient's previous data when obtainable and highlight the abnormal findings. The next section, assessment and plan (A&P), is the most important part of the admission note, and one may first write a summary of the previous sections before listing the patient's problems according to their order of importance, severity, and urgency. The plans include ordering for diagnostic and radiological tests and examinations, prescribing medications, and any other interventions such as consulting other colleagues.

Progress notes are day-by-day records about a patient's condition and there are different ways of writing them, but most adhere to the problem-oriented medical record structure which lists the patient's condition each day in the form of SOAP, an acronym for subjective, objective, assessment, and plan. It refers to subjective information obtained from the patient or caregiver, the objective data collected by observation, physical examination, and diagnostic studies, assessment of the patient's status, and the plan for patient care. Dr. Meng told the students that she preferred to place the subjective complaints, objective findings, and laboratory data together, but to list each problem for A&P separately.

Most old-timers — residents, case managers, and attending physicians — describe writing admission notes and reporting a case as "telling a story", and some even compare it to a movie director making a film where one has to "zoom in and zoom out" to see both the big picture and the minute details at different levels. They also often advise the neophytes not to "copy and paste" while they are writing their notes as they might miss out certain new problems or forgot to summarize the patient's conditions. However, young attendings admit that they cannot live without the "copy and paste" function but they all advise their disciples to think about what they are writing. Senior physicians at SOTH also frowned upon the use of templates or checklists in certain sections, mainly in the HPI and the ROS, because they believed that it would limit one's thinking about the patients' problems.

Concerning oral presentations, let us first compare parts of Chelsea's first and last oral report on her first patient to see how she learned to summarize the information and use certain medical terminologies.

Table 5: Comparison of Chelsea's First and Last Case Presentations

First Case Presentation	Last Case Presentation
Ms. Lin is 39 years old and she was admitted due to fever and painful micturition since last Friday evening. Her highest body temperature was 38.6 degrees Celsius and besides pain on passing urine, she had to go to the bathroom very frequently, roughly about once every ten to fifteen minutes… She came to our emergency room on Saturday evening and was admitted under the impression of acute pyelonephritis. Her lab results showed that her white blood cells were increased up to 12,800 with 92% segments and her urinalysis was positive for white blood cells, nitrites, and bacteria. She was given intravenous antibiotics but her symptoms persisted until Monday… Her lab tests this morning showed that the WBC has dropped to 8,000 and her UA has returned to normal.	Ms. Lin is a 39 years-old woman who was admitted due to fever up to 38.6 degrees Celsius and chills, nausea, poor appetite, painful micturition, and flank pain for one day under the impression of acute pyelonephritis (APN). At the emergency room, she was found to have leukocytosis with left shift: WBC 12,800, segment 92%; and bacteriuria. Upon admission, she was acute ill-looking, her vital signs were: body temperature 38.4 degrees Celsius, blood pressure 130/90 mmHg, pulse rate 102 per minute, and respiratory rate 22 per minute. Her physical examination was unremarkable except for left costovertebral angle tenderness. Her symptoms subsided after two days with intravenous ciprofloxacin and fluids, and her WBC and UA returned to normal…

A common mistake novices tend to make is saying that a certain laboratory data is abnormal or too high or low instead of reporting the actual number or value. Some students litter their sentences repeatedly with phrases such as "and then" and "like this", probably out of nervousness. But the main problem they face is not presenting in a logical manner. The key to a

successful oral presentation is practice and at SOTH, clerks are encouraged to practice on their own the previous evening. However, I did not encounter any student who did so though most would rehearse with the resident before making their report to the attending physician during ward rounds. The residents are usually very helpful and will correct and demonstrate how to report more succinctly.

With all these to learn, it is no wonder that initially when the neophytes begin their clinical learning, they tend to focus on the diseases as they struggle to translate what they have studied to the clinical situation. A student told me that it took him about two weeks before he was familiar with everything and could be "of use" to his patients. Consequently, students may neglect the person who is experiencing the disease initially. However, as they advance in their clinical training, they slowly begin to see the patient as a whole and take into consideration his personality, educational level, family situation, religious beliefs, etc, in their interactions with and management of the patient. We caught a glimpse of the manner in which the intern approached the patient with allergy while he was on duty. In addition to dispensing the medicine, he also counseled the patient to drink more fluids. Later in their career too, the practice will shift from in-patient wards to out-patient clinics which involves different disease types, diagnosis, and treatment. In my experience, it would be a couple of years before I finally found and established my own method and order of asking questions and conducting a complete physical examination

(refer also to Light 1980). As for providing holistic care to the patients, it would be a lifelong quest.

Language Issues in Clinical Practice

Another major problem students face in their work at the hospital concerns multilingualism. I emphasize the plural because in the hospital, students may encounter patients whose mother tongues are other Chinese dialects or Austronesian languages,[8] and foreign caretakers from Southeast Asian countries, mainly Indonesia, Vietnam, and the Philippines in descending order of their number in Taiwan.[9] Fortunately for the students, most Taiwanese people can speak the official language, which is Mandarin Chinese, although occasionally they may still have elderly patients who speak exclusively their own mother tongue, for example Caitlin's patient, in which case their children and other family members will normally act as interpreters.

The next layer is translating everyday or lay words used by their patients in describing their complaints into medical terminology and conditions. With Chelsea, it was finding out that "pain

[8] In Taiwan, the official language is Mandarin Chinese but the majority (70%) of people also speaks "Taiwanese", a dialect similar to Hokkien in southern Fujian province in China where the ancestors of most Taiwanese migrated from. Other main languages in Taiwan include Hakka (another dialect) and more than ten aboriginal languages. Unlike Chinese, which is part of the Sino-Tibetan language family, the aboriginal languages in Taiwan belong to the Austronesian language group.

[9] Taiwan began importing foreign laborers in 1992 to work in "3D" (dirty, dangerous, and difficult) jobs and in the following year, allowed the import of foreign domestic workers. They currently number two hundred thousand. For health care workers, the challenge is in communicating with the foreign domestic workers and teaching them how to take care of patients, because most of them arrive without prior training.

on passing urine" is known as "dysuria" or "painful micturition" in medicine.[10] Once I witnessed a student asking a resident if she could prescribe an ointment for a patient "whose mouth is whitish". The resident laughed and asked, "Do you mean she has oral thrush?" Dr. Meng, the doctor in-charge of training in internal medicine at SOTH, emphasized differentiating lay versus professional terminologies in different situations, such as when describing the chief complaint, one has to use the patient's own words rather than medical terminology, for example "redness and swelling" instead of "erythema and edema", and "shortness of breath" as opposed to "dyspnea". Health professionals here often used certain words wrong, notably, "chillness" instead of "chills" and "coming morning" instead of "the following morning".

Furthermore, students encounter problems when they have to record what their patients say or express what they have observed in English, the language for charting medical records.[11] For example, Chelsea had problems later finding out the English word for "a dish of boiled rice in water" (congee). Fortunately with online bilingual dictionaries accessible through smart phones or hospital computers, one can look up these information very quickly and conveniently. Last but not least, students need to understand professional talk among other doctors that is often interspersed with English terminologies and peppered with acronyms. To compound the problem,

[10] B. and M. Good (1993) compared learning medical terminologies to learning a foreign language.

[11] In Taiwan, medical charts are recorded in English but there have been calls from organizations advocating patients' rights for chart writing to be in the official language, i.e. Mandarin Chinese.

sometimes an acronym can refer to different things. For example, MS can mean multiple sclerosis or mitral (valve) stenosis. Even though all medical students here use English textbooks, I observed that a few students still struggled with understanding English medical terms when they were spoken and in spelling them. Many had difficulties in pronouncing longer English words, such as the names of medicines, especially antibiotics, because they tend to be similar, such as cefazoline and cefroxadine, and one requires some time to ascertain which one it is. Most hospital staff tend to carry on the tradition from olden days to say the English names of medicines in a Japanese fashion by breaking up all the syllables and placing emphasis on each. For example, the popular way of pronouncing the brand name of paracetamol or acetaminophen is *Pa-na-dol*, instead of Pan-*a*-dol. Once when a senior physician corrected a student's pronunciation, she complained that it was useless to speak correct English in the hospital because she would not be understood by others (from my own experience, I found it to be true). However, the senior physician argued that they would be misunderstood by the rest of the world if they did not speak in the proper fashion and that they could slowly change the habit of their staff. Returning to the language issues, in their interaction with patients, students have to again "unlearn" their professional jargon and speak in lay terms and language, so they go through cycles of learning, unlearning, and relearning.

Competencies Required in Clinical Practice

When we review the work of a medical student in the hospital, we see that she requires many different kinds of skills, many of which she has not been taught or is prepared for previously at school. The main issue that stands out is time management and work organization. Work in the wards is often interrupted by numerous happenings and people, mainly phone calls, but also having to deal with unplanned things such as a stat order, or talk to family members inquiring about the patients' conditions, or consultants dropping in to see the patient, etc. It is difficult to plan when to see a patient because they are often away for various tests or they may be resting. Therefore, a medical student has to learn how to prioritize the tasks, such as if she should go to see a patient, or write the progress notes, or look up information about a certain topic or disease, or watch how the intern performs a certain procedure, or call the laboratory about a patient's test, etc. At any time, there are numerous chores that need or should or can be done, but how does she decide which to do? Slowly, the neophyte will have a clearer idea if A needs to be completed before B. In addition, she has to keep an eye on the time she spends on each task, otherwise it might take up too much of her time, and learn to work efficiently. Bit by bit, she will establish her own pace, rhythm, and order of doing things.[12]

[12] In her autobiography, *The Making of a Woman Surgeon*, Morgan (1980) noted that it was not until she became a chief resident that she established her own pace in carrying out operations.

In my opinion, another related problem for the novice student is not knowing when she can or should end her day. We recall earlier that the students' first day officially ended after their orientation by the case manager at 5 p.m., but in actual fact, most of them stayed on much longer after that. The matter of when one's work is done in the hospital is a big question especially for a young apprentice in medicine, because she finds that there will always be work that is not completed, such as an order that needs to be given, a procedure that has to be done, a test result to be followed-up, etc. From my own experience, the ambiguous boundary of work and personal life is a lesson many health professionals have to learn, particularly in Taiwan where most doctors live in hospital dormitories or apartments.[13] Throughout my career, I often encounter other colleagues who work long hours, including residents, attending physicians, and nurses. One resident was nicknamed "7-Eleven" after the convenience stores that open twenty-four hours per day, seven days per week, because he literally lived in the hospital. (Incidentally, that is the origin for the word "resident", or "housemen" in the British system). I believe that was why the case manager, the doctor in-charge of training, and some teaching attendings advised the students to leave the hospital after the allotted time. Even so, work is not entirely over for the

[13] The consequence of this fact was highlighted during the 1999 earthquake in Taiwan where hospitals in the disaster zone had no problems with shortage of personnel unlike in Kobe, Japan, where hospital staff was exhausted from working long hours after the earthquake in 1996 because their colleagues could not get to their hospitals to relieve them as many lived far away from their workplace and could not get to their workplace due to the breakdown of transportation. A classmate of mine told me that he when he was a resident, he felt guilty about not going to check on his patients every evening, even when he was not on duty, because he was living on hospital premises.

students when they are away from the wards. They often have to look up information about their patients' problems so most of them will go to bed at midnight or even later.

The change of environment from the school to the hospital also means that students have to assume work responsibilities on top of learning. Students discover that they require physical stamina to deal with the long hours. While they are on ward rounds, they have to stand most of the time and hardly have any opportunity to drink or eat for hours in a row. Some attending physicians walk very fast during rounds and I observed that a couple of women students had a hard time keeping up with their attendings' quick strides, especially when they were climbing the stairs. Their work days were normally twelve hours long, but usually they stretched to sixteen. It was no wonder most students sneaked off to their locker room, the library, or their dormitory during mid-day for a nap even after they had been told by the chief resident against it. I noted that a couple of weeks into their clerkship, a few of the students started to develop pimples on their faces and often during ward rounds, one or two of them would be wearing a mask due to a cold.

Another major competency students require in clinical practice is communication skills. Medical students are taught about the subject while at school but they often do not know how to

apply it.[14] Then when they are faced with patients, they find out its value but they have to refresh the lessons. In addition, many students in Taiwan nowadays do not have much experience interacting with people outside their age group and socio-economic stratum, since most are raised in small, nuclear, middle-class families, and spend most of their young lives keeping their noses to the grindstone to enter medical school. The inadequacy also increases the psychological barrier of the novices about interacting with their patients, although there are other reasons, for example, they do not know much yet about medicine, they are afraid that they do not have all the answers to their patients' questions, and the fear that they may be turned away by the patients because they are not proper doctors.

Why do medical students feel particularly vulnerable of their learner status in the hospital? A reason may be because their learning is not acknowledged by most hospitals or appreciated by the public in general and patients in particular. Even though the general public in Taiwan reveres medical doctors, most people expect physicians to be all-knowing. Part of this concept grows from stories one hear while growing up about expert physicians in the past who could diagnose any illness just from feeling a patient's pulse.[15] As a result, patients are often surprised by doctors trained in biomedicine who ask a lot of questions about their condition during the history

[14] In some local medical schools, the course is separated into communication with normal people and that with difficult patients, and they are given during different phases of the students' medical education.

[15] In actual fact, there are four components to making a diagnosis in traditional Chinese medicine: inspection, listening and smelling, inquiry, and palpation (taking of the pulse). The third part is equivalent to history taking in Western medicine while the rest are also performed in the physical examination in biomedicine.

taking and some may reply, "I don't know. You are the doctor so you should tell me what's wrong." An eminent medical educator, Dr. Chi-Wan Lai, compared his experiences on this in the United States and in Taiwan. Once a patient showed him some unlabeled pills he had been taking,[16] and he referred to the *Physicians' Desk Reference*. The patient remarked scornfully, "I thought you are very clever, coming back from America, but you don't even know what these are, and have to refer to a book!" Dr. Lai recounted the opposite treatment he received when he did the same thing in front of a patient in the U.S. The patient was very grateful to him for taking the time to check the name of his medication and thought that Dr. Lai was a very good doctor because he was meticulous and willing to look up information.

Other skills or competencies the student will require later on include teamwork, i.e. knowing how to work effectively with other health care professionals; prevention of burnout and how to take care of one's negative feelings and emotions; and leadership. The last is a popular but covert expectation of physicians by those around them: that because they are bright enough to study medicine, doctors must be capable of managing and leading other people. It is a false belief but many hospital administrators are unaware of their illogical assumption and educators can either correct this or offer training on this to medical students.

[16] This was before the days when health care institutions are required to provide complete information of any medication prescribed, including the name (both brand and generic), dosage, usage, properties and side-effects.

The Harsh Realities of Clinical Practice

The greatest difference between textbook learning and clinical training is that students have to deal with real patients who come from all walks of life. They may encounter highly educated people who look up lots of information on the internet about their disease and ask about the latest medicines on trials in other countries, or illiterate elderly patients who do not recall what problems they had in the past or the medicines they are taking. Recall our protagonist Chelsea's "discovering the facts of life" about her second patient lying to her and her third patient's experience. The first few encounters with patients' deaths usually have great impact on young novices of medicine who are typically in their early twenties when they begin their clerkship training. Even though medical students in Taiwan nowadays are offered courses about death and dying at school, still, I think it is rather hard for them to experience it. However, at most hospitals, the subject about a patient's death is normally not discussed at all,[17] unless there had been some mismanagements and would be brought up at morbidity and mortality conferences (M&Ms), which in most are very unpleasant experiences. The unspoken message, or hidden curriculum (Hafferty 1988), given to novices is to "get over with it". This practice totally ignores the feelings of the neophytes and may have untoward consequences. A related issue is the subject of uncertainty, which has been widely studied (see especially Fox 1957). At SOTH, this is

[17] Konner (1987) also described the reluctance of senior staff at the hospital he trained to talk about patients' deaths.

decreased by close supervision of the novices and if an unfortunate circumstance do really happen, by allowing the students to talk about their experiences either with their mentors or during the Clinical Humanities Discussion sessions which we shall investigate later.

Resources for the Novices

How do the students feel about their training in the hospital? Chelsea compared her initial learning experience to "hitting cockroaches", i.e. not knowing where to aim and missing the point most of the time. Her classmate felt that the attending physician's constantly increasing demands on their performance was making them "run after a moving train". The most extreme was the feeling Chelsea had of being "pulled up by the roots" when a patient's condition suddenly go downhill or when they encounter the death of a patient.

Faced with these hurdles, many rather enormous and seemingly insurmountable, how do medical students cope at the beginning of their clinical training? Throughout my fieldwork, I observed how the students helped one another with all sorts of things: they reminded one another about their schedule and classes, taught their peers what they had learned, and shared information about what they knew.[18] For example, when Chelsea found that her second patient had cellulitis, she asked her best friend in surgery who had just completed her internal medical

[18] Becker et al. (1961) also noted the willingness of medical students to help one another.

rotation what to watch out for. The latter told her about the typical signs and symptoms in those patients, reminded her to differentiate from other diseases such as erysipelas, and taught her how to distinguish the two. Another example is a particularly observant clerk who told her classmates who just arrived at SOTH from RATH to take the staff elevator during lunch hours because there would be less people but to use the public lifts at other times because they would be faster then. The camaraderie extended not only to their own classmates but also to new interns, regardless of which medical schools they were from. We saw how Chelsea taught Isaac the intern how to prescribe medications through the computer system. Another example was at the beginning of a new rotation, I observed that the REMS clerks shared with an intern from PEMS information about free lunches on certain days at the hospital canteen. Furthermore, the students would actively ask one another for information, for example, what to do for one's meeting with the director of training or where to go for dinner when the hospital cafeteria had closed, and they would also remind one another of certain things, such as to take off their white coats before they leave the hospital as the secretary had warned them against, or about certain special classes or activities. I admired Chelsea for taking an active stance against her inability to speak the Taiwanese dialect. She began practicing speaking Taiwanese to her peers and another classmate joined her. Later, she attended an informal class on medical Taiwanese every Thursday evening at another hospital that was organized by a young doctor. She showed me a thick book that the

doctor had compiled of common words and phrases in medicine in both Mandarin and Taiwanese.

The students also had a lot of support from "sympathetic" others, such as the residents, case managers, clinical pharmacologists, nurses, chief residents, teaching attendings, secretary, etc. These are people who understand the situation of the novices and the assistance they need, such as at the beginning, they do not have a clue about where everything is or what to do, and they require specific, detailed, step-by-step information and instructions. The problems newcomers encounter may seem minor to the old-timers because the latter usually forget the initial pain they had to go through. Therefore, it takes certain personalities who are meticulous and who are willing to go through the trouble of explaining where everything is at the beginning to the novices. These people also have to repeat their reminders every month when they receive a new batch of interns and every three months when another group of students begin their rotation in internal medicine. The administration at SOTH tell me they were fortunate to find people such as the secretary in-charge of clerkship training and Maria, one of the case managers, for the job.

Maria the case manager was literally the novices' "mother hen": she would guide them in matters big and small, from coaching the students about what to do at the bedside during ward rounds, to warning them about potential injuries from their occupation (hurting their back if they do not observe their posture), to even advising some of them when their attire was not

appropriate and befitting of a young health professional. I caught a glimpse of this aspect in her scope of work during the monthly students' assessment meetings.

The residents are also very helpful and will even give hints to the students when they did not know the answer. They normally supervise the students to execute the orders after ward rounds, such as what to write in a consultation note, how to prescribe urgent vs. routine orders, print out a medical certificate, write a discharge note, etc. The residents differ in their styles of teaching or coaching, for example, one of them would guide the students very patiently and in detail while another preferred the Socratic method, i.e. question and answer, to let students think about the answers themselves. Actually, in most teaching hospitals in Taiwan, residents are treated as "young doctors in-training" and as such, they are not expected to play any role in the teaching of their juniors.[19] In reality, residents are near-peers to medical students, since they have just experienced being clerks and interns themselves, and most are quite sympathetic to the plight of the neophytes and might teach or guide their juniors better. At SOTH, there is a tradition for residents also to be teachers to the students, as laid down by those senior physicians who had previously trained and worked in the U.S.

Even other health professionals, such as the clinical pharmacist who alternately participated in the ward rounds of the two teaching teams, will share her knowledge with the students quite

[19] This has changed: the new standards for accreditation of medical schools in Taiwan acknowledge the important and positive influence of near-peers in the learning of medical students.

willingly. The nurses at the general medical ward at SOTH are also friendlier and more helpful towards the students, and they were more willing than their counterparts elsewhere to notify the novices of patients' complaints so that they could gain more experience in handling patients' problems even though it is more troublesome for the nurses as they would have to wait longer for an order to be given about what to do. The students were told by various people, such as the case manager and teaching attendings, that those nurses at the teaching ward had been trained to judge who to call when they received a complaint from a patient or family and that in more serious or urgent situations, they would inform the senior resident on-duty to handle the case directly.

Various Forms and Extent of Participation

The old-timers may give the newcomers some advice about how to "survive" in the hospital, for example to finish their meals quickly, but we saw how students may resist changing their old ways or adopting new ones. For example, once a surgeon noticed that a male student was wearing white socks with black shoes and after the ward rounds, he took the student aside and taught him how to match his attire better including how to choose a tie to go with his shirt. However, the student still preferred to wear white socks and the surgeon did not pursue the matter any further. M. Good (1995) labels these as "small rebellions" and she believes that students put up acts of defiance to assert themselves in minor ways or to behave in a moral way.

During my fieldwork, there were a couple students who were observed by the teaching team initially as lacking in confidence about themselves and their work, but who later — one during the second month of her medical rotation, while another until her surgical rotation — "broke out of their shells" and improved their performance. The latter changed so much that many noted that she even looked like a different person. There was a man whom one of his interviewers did not think was suitable and was initially rather against accepting him, but in the end who was found to be quite all right. On the other hand, there was a man who was noted to be "out of touch with reality": he would not actively follow up his patients' laboratory data and would be unavailable while he was on duty. I once observed him marking sentences with a highlighter in a book that I knew he had borrowed from the school library and when I asked him why he had done that, as the book was not personal property, he replied, "Why can't I?" I was told that Maria, who seemed always rather cheerful to me, became quite exasperated by him after she tried unsuccessfully to guide and correct him a few times. Shirley, Dr. Meng, Prof. Tang, and his mentor all tried to talk to him but still, he could not see where he was wrong and was rather nonplussed by the teachers' reactions towards him. Shirley had many talks with him and gave him lots of concrete examples about what to do in different situations, and he eventually improved during his last month in internal medicine. She was quite willing to counsel and guide

the student after Maria had given up on him but she said that she could not handle too many of such students at the same time.

Even though test scores cannot completely reflect one's extent of learning, still, they serve as some sort of indicator. According to Shirley, the student did not improve during his post-test, meaning that after three months of clinical practice, his knowledge of medicine remained the same. There was another woman who seemed quite bright and promising but who also did not show any improvement during her post-test. I had observed that she was rather smart but her work performance varied according to how strict she thought her teaching attending was and how much they expected of her. One of the men, however, obtained the highest marks in his post-test among his batch and he had the biggest difference in his pre- and post-test scores. Shirley asked him for the reason for his improvement and he initially replied that he had no idea why. After being pressed by Shirley, he said that he suddenly "knew" how to study, i.e. he could grasp the essence in the textbooks and the cases that he encountered in practice. The women who was top of their class and who had already scored quite well at the beginning, though not the highest, still managed to improve slightly in her post-test. I noticed that she was rather proactive and conscientious about her work.

The teachers and mentors at SOTH often ponder about how to select students for their program, especially when they encounter "difficult" students, for example during the following

year when they accepted a man who turned out to be very hard to get along with. Shirley told me that once he made a woman classmate cry by criticizing her. The teachers and mentors thought he was very clever but did not apply himself to his work. He would only exert himself enough to be "passable", for example in his chart writing. His mentor was Dr. Hong and she very patient with him. She would spend time listening and talking to him but he refused to accept her suggestions, often saying that he would think about them. At the end, Shirley confessed that they had no success with him but she thought it was good that he came to SOTH because the teachers were willing to guide and advise him, compared to what his situation would have been if he went to other hospitals.

Conclusion

In this chapter, I have looked at what it was like for medical students at the beginning of their clinical training, the problems they encountered, and how they overcame them. I have also looked at some of the different ways in which students reacted to their clinical training. The learning process of medicine by students is comparable to a person looking at an object in the quote at the beginning of the chapter. Initially, the item appears just as it is. However, when one knows something more about it, the thing becomes different in one's eyes. Then as one scrutinizes and understands it even further, the artefact seems to be the same again, even though

one can discern some details about it. This is the continuous cycle of learning, unlearning, and relearning. I also argue that many of the skills medical students need in clinical practice are not taught at school. These are the areas educators can affect to make learning more student-centered and to facilitate novices in their work. We shall continue to see and think of these issues later from different angles.

Part II: The Teachers

We have seen what it is like for the novices of medicine when they begin their practicum in the hospitals in the previous section, let us examine clinical education from the teachers' point of view, particularly how expert clinicians teach in various settings including formal teachings such as the ward rounds and classes, and less formal situations for example at the outpatient clinic and operation room. Like Irby (1992) and Hattie (2008), I will use exemplary instances of teaching to uncover "what works best". I will first look into literature from traditional classroom studies and research in clinical settings, and provide an overview of my findings from my observations and comparisons of five expert teaching attendings at work. In the following chapters, I will present their teachings in their entirety so that readers may have a better understanding of the whole process. I will start with the ward rounds, which is a "signature pedagogy" of clinical education because it is the mode of teaching that is distinctive of the medical profession, essential to and pervasive within the curriculum as elements of instruction and socialization, and universal across institutions (L. Shulman 2005). Then I will describe a special form of case discussion conducted by senior physicians followed by various instances of teachings by an expert surgeon-teacher.

Teaching rounds are group discussions that are focused on certain cases and led by the teaching physician for the ward team and they have competing aims, notably patient care and

teaching (Mattern, Weinholtz, and Friedman 1983; Weinholtz 1991; R. Shulman, Wilkerson, and Goldman 1992). As in the classrooms, the teacher is faced with various concurrent demands that require immediate attention (Leinhardt and Greeno 1986; Borko and Livingston 1989; Sabers, Cushing, and Berliner 1991). Moreover, clinical instructions often happen in ill-structured contexts and dynamic environment, and therefore require thinking, adaptation, and improvisation in the midst of action (Yinger 1986). Irby (1992), who studied how expert internists conducted ward rounds, classified the process into three components: before, during, and after rounds. In classroom teaching, the main work before the activity involves planning: constructing knowledge of the content, learners, and teaching methods, and devising schemes for instructing a specific topic (L. Shulman 1987; Borko and Livingston 1989). During teaching, the instructors have to gauge the learners' level of understanding (Putnam 1987) and continuously monitor, think about, and make decisions about the task dimensions of teachings (such as the goals and methodology), the contents, and interaction with the learners (Clark and Peterson 1986; Yinger 1986; R. Shulman, Wilkerson, and Goldman 1992). After class, good teachers will reflect on the process, on themselves, and on the learners (Schön 1983; L. Shulman 1987; Wilson, L. Shulman, and Richert 1987). Mattern, Weinholtz, and Friedman (1983) found the value of initial orientation and final evaluation, and that learners at all levels particularly appreciate the latter. Hattie (2008) discovered that it is even more useful if teachers were given feedback about their teaching by

students. From his synthesis of more than eight hundred meta-analyses on learning, Hattie concluded that the important matter is to make both learning and teaching visible, i.e. it is a deliberate practice where active, passionate, engaging people participate in the act of learning, where learning is made explicit and is appropriately challenging, and where teacher and students determine whether and to what degree their shared and specific goals are achieved, aim at attaining mastery of them, and provide feedback to each other. He emphasizes that it requires a safe environment for both students and teacher to allow for errors, and that the greatest effects on student learning occur when teachers become learners of their own teaching and students become their own teachers. The last point is similar to Frenk et al.'s (2010) finding that the best learning is where students not only acquire knowledge and skills, or even values, but are able to learn by themselves. Hattie's observation about the deliberate, interdependent, and collaborative nature of learning where teacher, student, and peers engage actively and passionately with one another is similar to the model of legitimate peripheral participation that Lave and Wenger (1991) postulated which focuses on the situated nature and relational character between learners at different levels and teachers, except that the latter includes also movement of novices from newcomers to old-timers. My fieldwork findings are closer to that of Lave and Wenger. Concerning expert teachers, extensive knowledge of the field or subject, adopting the Socratic method of instruction, establishing a climate of mutual respect, knowledge of learners'

understanding and misconception at each level of training, ability to integrate teaching into patient care efficiently, enthusiasm for and commitment to teaching, and good interactions with and genuine concern for patients and learners in clinical settings are some of their qualities (e.g. Dinham and Stritter 1986; Hewson and Jensen 1990; Irby et al. 1991; Skeff 1988). Expert teachers understand how people learn (Spencer and Jordan 1999), are better able to monitor, understand, and interpret events in more detail and insights, and selectively attend to the multi-dimensional nature of the situation (Sabers, Cushing, and Berliner 1991; Irby 1992).

My observations of several expert attending physicians at teaching and comparisons of how their colleagues do things differently is rather similar to the findings above. I concluded that there are four levels of teaching: (1) dumping information on the students one-way; (2) eliciting information from the learners and having some dialogue; (3) assessing the students' levels individually, e.g. what they know or do not know; and (4) knowing the personalities and characteristics of each learner and tailoring one's teaching accordingly. We have looked at the orientation given by the hospital teaching staff in the previous section but I found that expert teachers will still initiate the learners about the process during the rounds and state their expectations at the beginning of each rotation. Before the rounds, these physicians will familiarize themselves with all the cases to plan for teaching and set aside time for patient care on their own so that they can focus solely on teaching during rounds. When teaching, the expert

teachers will select certain cases for in-depth discussion in order not to overwhelm the novices and to keep within the allocated time. Schmidt, Norman, and Boshuizen (1990) noted that for each subject matter, there is diversity of teaching focus because of the teachers' different experiences and Leinhardt and Greeno (1986) found that on average, most teachers give four teaching points for easy recall. Elstein, L. Shulman, and Sprafka (1978) discovered that when physicians are faced with familiar cases within their domain of expertise, they make diagnosis in an automatic manner. However, when they encounter problems that do not fit recognizable patterns or are outside their knowledge realm, they will try to retrieve from prior experience to match the clinical presentation (Schmidt, Norman, and Boshuizen 1990). The better teachers will try to use the clinical examples to relate to what the students have learned or already know (relevance) and build on those to point to what they need to know more (their ignorance), in other words, they challenge the learners. Biggs and Collis (1982) and Hattie (2008) remind teachers that there has to be a balance between surface learning (acquisition of knowledge, facts, information, and ideas) and deep learning (ability to integrate and organize various pieces of information together and deduce some general rules). However, teaching has to be done in a non-threatening manner with lots of repetitions, use of mnemonics, approach from different angles including use of stories or anecdotes, reorganization of content, and summaries at the end. Expert teachers will even warn the novices of potential problems and pitfalls. They can hold the

learners' attention, increase their expectations and goals with the progression of time and by the learners' level of training, make use of learning resources, delegate teaching responsibilities to relative old-timers, and recruit other health professionals and even patients as teachers. They have to remember what duties they have assigned to which learner and check on them later. When teaching a technique or skill, expert teachers will break the task down into smaller parts, let the learners practice in a step-wise manner, and link theoretical knowledge to clinical situations. I found that good teachers put themselves as learners, think about their teaching afterwards, and elicit feedback about it from the students. Let us explore how these expert teachers conduct clinical education in the following three chapters that are organized by the type of teaching.

Chapter Four: The Ward Rounds

循循善誘、因材施教

To guide patiently and systematically; to teach according to (the student's) aptitude

– Chinese idioms[1]

The ward rounds are the main site of formal teaching between the teacher (attending physician) and the learners (medical students, interns, residents, and other health care professionals) at the hospital. In this chapter, I shall look at two particularly good examples of ward rounds to examine their characteristics and compare them to others. I argue that the better ward rounds are those where the attending physicians actively engage the students in the discussions and teach about patient care holistically.

At SOTH, the ward rounds usually take place between 9:30 a.m. and noon. From 11 a.m., a radiologist will be available to conduct image readings with the teaching teams but not all attendings take advantage of this unique teaching arrangement. A couple of physicians also hold rounds late in the afternoons. During the ward rounds, the physician will see each patient admitted under his or her care in turn. Each teaching team has a maximum limit of twelve

[1] These expressions originated from *The Analects of Confucius* to describe the methods of teaching of Confucius (551–479 B.C.E.). The second idiom was from an incident whereby Confucius was observed to provide contrary advice on the same matter to two of his disciples. He explained that the students were of different personalities so he had to instruct them according to their capabilities and characteristics.

patients and although most of these patients are housed in the general medical ward, oftentimes they are scattered throughout the hospital because the general medical ward is frequently full. Before admission, patients are told about the teaching teams and given a choice of whether they would like to assist in the education of future physicians or if they prefer to remain under the care of their original attending physicians. If a patient agrees to the former, she or he will sign a consent form and be admitted under the teaching team. The team will keep the attending physician informed of the patient's condition, particularly special situations and when the patient is about to be discharged.

The teaching attending has to make many decisions about how to conduct the ward rounds and what to teach during the two and a half hours each morning (see also Irby 1992). At SOTH, since there is only one meeting room in the general medical ward but the two teaching teams hold their ward rounds at the same time, the physicians even have to coordinate where to assemble their team and carry out the round. Most will alternate use of the meeting room, usually abiding by the same rule for taking in new patients according to the date, i.e. Team A on an odd number day and Team B on an even number day. The physician then has to decide the order for reporting and seeing the patients. There are basically two types of sequences to the ward rounds: (1) discussion of all patients first before seeing individual patients, and (2) discuss and see each patient individually, or if the patients are in the same room, discuss and see them together. An

attending physician told me that he prefers to just listen to one or two reports and see those patients before going on the next couple of patients because he has a bad memory. Indeed, I found it hard to remember all the information and data of the patients, especially at the beginning. Yet, some teaching attendings opt to have the team verbally report the conditions of all the patients before seeing them from one end of the ward to the other because they can better control the amount of time spent. The sequence is usually: new patients, critical "old" patients, and stable "old" patients according to their bed number. Old patients refer to those who have been admitted for more than a day and whose condition should be known to the team. By focusing on the new and critical patients first, the physicians can later adjust the amount of time they spend on those old but stable patients in order to finish the ward rounds on time. As mentioned earlier, the two teaching teams have alternate use of the meeting room in the general medical ward, so some physicians mix the two forms of ward rounds, holding discussion of all patients first when they have use of the meeting room and discussing and seeing individual patients when they do not. Those attending physicians who prefer to discuss the patients altogether have to look for spaces to hold the discussions on days when they cannot use the meeting room, for example the nursing station, meeting rooms at other wards, and even the "Sunroom" which is a lounge with comfortable chairs for patients and their families to rest and relax.

Most teaching attendings allocate more time to the discussion of new patients and those with more severe or critical conditions, so the length of time that is spent on each patient is determined mainly by the amount of time available, the total number of patients that day, and the conditions of the patients. Another factor is whether the team utilizes the consultation or discussion session with the radiology department that is available from 11 a.m. to 12 noon each morning. During ward rounds there are often various interruptions, such as phone calls and other health professionals dropping by, or unexpected or impromptu incidents or happenings, for example, when a patient's condition suddenly worsens and warrants immediate medical attention. If there is time at the end, the physician may do a mini teaching on a certain topic.

During ward discussions, the attending physician will let the person (student, intern, or resident) taking care of the patient make a report and then go through the case. Although the content of the reports varies according to the individual patient and his or her condition, the order in which the information is presented usually follows that in the admission note for a new patient: chief complaint, history of present illness, past medical history including medications and allergies, social history, family history, review of systems, physical examination, laboratory data including images, assessment, and plan. For old patients, the report is usually shorter, since others on the team already know about the patient's situation, so the student is expected to give a brief summary of the patient's background and diagnosis before presenting about his or her

current condition, assessment, and plan for management. At the end of the presentation, the attending will normally ask some questions to ascertain whether the student has fully grasped the patient's condition. If the physician thinks that the case has certain value for learning for the team, he or she may spend some time on its discussion. When the doctors see the patients, they will first greet the patient and their family members, ask the patient how he or she is doing, examine them briefly, and then explain to the patient and family the current situation, test results, and treatment plan. If there is something interesting about the patient's physical condition, the attending may let the students examine the patient. After leaving the room, they will often go through the case again quickly to remind the person in-charge about new orders or what to watch out for. Most teaching attendings adhere to a certain form of ward round so the only variable that changes is the type and condition of the patients.

It is evident from the above account that the teaching attending has to accomplish several tasks during the ward rounds, namely, (1) to find out and assess each patient's condition, (2) to explain the situation and discuss treatment options with the patient and family members, and (3) to instruct the students and other members in the team.[2] In local professional jargon, these are described as "service", "social", and "teaching". Even with the twelve-patient limit, most physicians felt that it was too heavy a burden on them. In order to make their ward rounds more

[2] See also Mattern, Weinholtz, and Friedman (1983); Weinholtz (1991); Irby (1992); and R. Schulman, Wilkerson, and Goldman (1992).

effective, they devised various strategies to cope with the different demands. Like the expert teachers in Irby's (1992) study, all the teaching attendings told me that they would look up their patients' medical records and test results beforehand so that they had a good understanding and grasp of each patient's most current condition. A few of them might even visit certain patients before the ward rounds to ascertain their current states, especially those whose conditions were unstable or critical and new patients who had been admitted the evening or night before. Armed with the most up-to-date information about their patients, the physicians would then know what to teach during the ward rounds.

An Exemplary Form of Ward Rounds: Dr. Guan

Doctor Guan is a gastroenterologist in his late thirties who is acknowledged by most students, residents, and case managers as one of the best teachers at SOTH. I noticed that he varies the form of his ward rounds, focusing on one or two themes each day and progressively introduces new elements as the students become more accustomed to clinical practice and the workings at the hospital. Below is the record of his teaching to a group of students from REMS during the first month of their second clerkship rotation. The students — who I shall name as Carol, Clara, and Cody — had done other courses in their own teaching hospital and were beginning their half-year stint at SOTH in internal medicine and surgery. Hence, they already

had some experience in clinical medicine. Because they were new to SOTH, they attended the one-day orientation on the first day. With them were three interns, one from REMS and two from QEMS, whom I will call Ida, Irving, and Ives. The team had a new chief resident, Dr. Rose, and two nurse practitioners, Nancy and Nellie, that month and the case manager was Maria. Dr. Guan usually began the ward rounds at 9:30 a.m. and finished by 11:30. I shall first outline what Dr. Guan did on each day during ward rounds in the two weeks I observed his team.

On Friday, the second day of the month, Dr. Guan had already seen all the patients with the chief resident and nurse practitioners the previous day and the interns had been assigned their patients but not the students. Therefore, Dr. Guan presented some of the patients himself to the team. He allowed the interns to report their patients but he would summarize the case and highlight key points of care after that. He discussed and saw each patient individually. Dr. Guan placed much emphasis on case presentations, so after the interns and nurse practitioners had reported about their patients, he would sometimes ask them to "simplify" their presentations, i.e. summarize the case. One of the patients had infective endocarditis, a condition where infectious organisms cause the inner tissue of the heart to be inflamed, and Dr. Guan used it as a teaching model. After Ives reported the case, Dr. Guan asked him to simplify it and he guided Ives to present its cause and effect chronologically. Next, he asked Ives about the patient's physical examination. When they went into the room to see the patient, Dr. Guan examined the patient

and pointed out the various physical findings to the team. He got Ives to listen to the patient's heart sounds. Upon leaving the room, he reminded Ives to read up about heart murmurs and to examine the patient every day, paying particular attention to the breath sounds as the patient also had some fluid in his left lung, a condition known as pleural effusion. After the rounds at 10:40 a.m., Dr. Guan led the team into the meeting room and told the students his requirements for the ward rounds: he wished to finish seeing the patients within an hour, even though it had been too long that day, and he wanted the students to prepare a short, one-minute report of each patient and a longer, five-minute report. Next, Dr. Guan gave a mini teaching on how to make a case presentation by asking Ives to do a longer report on the patient with infective endocarditis. He focused on what information to elicit from the patient's chief complaint by using the mnemonic, LQQ-OPERA. Dr. Guan then went through all the sections in the admission note using the case and he would ask each student questions in turn as he proceeded. At the end, he opened the floor for questions and the interns raised various questions about their patients. Ida had a question about her patient with fever of unknown origin[3] and Dr. Guan first asked the nurse practitioners Nellie and Nancy to answer before he got Dr. Rose the chief resident to comment. He explained in further details about the case before telling the team that the main point about the patient was uncertainty, which he expounded as "knowing about what one does not know".

[3] The condition, abbreviated as FUO, occurs when a patient has elevated body temperatures but which cause cannot be determined despite investigations by a physician. That was why Dr. Guan emphasized the uncertainty factor.

The following Monday, the fifth, Dr. Guan handed out an article entitled “Breathless” (Gavin et al. 2012) before he began the ward rounds. He explained to the students that it would help them describe and present their cases. The first patient was Irving’s and after his report, Dr. Guan told Irving that for old patients, he should mention changes in the patient’s condition since his last report. As he had done previously, Dr. Guan would summarize the case after each student’s presentation. The clerks had been assigned their patients before the weekend so they also gave their reports. The team finished discussing and seeing all the patients by 10:46 and they went to the meeting room for a general discussion. Irving brought up a patient of his who was dying and the team talked about various aspects of his care. At 11 a.m., the team went to the radiology meeting room on the first floor where they looked at the images of two patients who had tests recently. The person in-charge of the patient presented the case briefly to the radiologist before the latter commented on the images. The discussion finished in a quarter of an hour and Dr. Guan spoke to the students in the corridor outside. He told the team that the ward round was still too long that day and that he wanted everyone to practice their case presentations. Then he went through the patients to remind each person what he or she had to do. The ward rounds finished at 11:22 and the students went up to the general medical ward where Maria the case manager took over in overseeing the students at their tasks.

On the sixth, Dr. Guan arrived at the ward at 9 a.m. He conducted the ward rounds as he had done before, asking questions and drilling the students about their presentations, and telling them what to read up on. At the bedside, Dr. Guan would perform key physical examinations on each patient and if there were some special findings on auscultation, he would gesture to the person in-charge to listen too. He performed a more detailed examination on one of the patients with liver problems, pointing out to the team various findings such as the jaundiced skin, vascular changes on the chest and abdomen (spider angiomata and caput medusa), and the span of the enlarged liver. After seeing the patient with infective endocarditis and pleural effusion, he told Ives to teach the clerks about his patient's heart and lung sounds later that day. At the end of each visit, Dr. Guan would go through the key points about the patient. The ward round ended at 10:30 that morning and the team remained at the nursing station for a general discussion as the meeting room was occupied. Dr. Guan taught the students to think about three differential diagnoses for each patient and to do tests for them at the same time. They went for the radiology discussion at 11 o'clock and looked through the images of two old patients. It ended after fifteen minutes and Dr. Guan again debriefed the team after that, so the ward rounds ended at 11:20 a.m.

On Wednesday, the seventh, the ward rounds started at 09:10 and Dr. Guan had a detailed discussion and bedside examination of a new patient with urinary tract infection. It was Ida's patient and Dr. Guan spent some time to clarify the timeline of appearance of various symptoms,

with supplementary input from Dr. Rose. After the discussion, Dr. Guan asked Ida to summarize the case in one minute. They then went on to discuss and see other patients. If the patient were critically ill, at the end of his or her life, or in isolation due to a contagious condition, Dr. Guan would select a handful of people to see the patient after the discussion, usually the person in-charge, the case manager, the nurse practitioner in-charge, and the clinical pharmacist. At the same time, he would ask Dr. Rose to take over the discussion of other patients with the rest of the tem. When they got to the patient with infective endocarditis and pleural effusion, Dr. Guan ascertained that Ives had taught his juniors the special chest findings in the patient as he had stipulated the previous day and he highlighted those unique features in the physical examination again when they saw the patient. They finished seeing all the patients at 10:46 a.m. and Dr. Guan announced that his ward rounds would begin at 9:30 a.m. the following morning, but he wanted all the students to go through their patients with Dr. Rose at 8:45 before that. He expected them to do a one-minute brief report of their old patients the following day. While discussing some of the patients, Dr. Guan told the students that they should learn what is typical about their patients compared to the textbooks before what is atypical. He offered some other tips about learning and assigned topics for each student to read up on based on their cases. At 11:05 a.m., they went for the radiology discussion of an old patient which ended at 11:23 and it was followed by a very short debriefing.

The next day, Dr. Rose began her work rounds with the students promptly at a quarter to nine. She had all the students give their one-minute report of their patients, corrected their presentations, and asked questions about their care and management. Sometimes she would demonstrate how to give the short report. Dr. Rose finished the work rounds five minutes before 9:30 to see a patient herself. Dr. Guan arrived at 9:35 and they discussed and saw the old patients briefly. There were two new patients and Dr. Guan spent more time in their discussion and bedside examination. When Ives missed out reporting certain findings about his new patient, Nellie went behind Dr. Guan's back and facing Ives, gestured to give him a hint. The team did not have time for general discussion but went for the radiology session from 11:03 to 11:35 to discuss the images of one of the new patients and two old patients. After that, the team continued to see the rest of the patients. The ward rounds ended at 11:47 a.m. that day.

On Friday, the ninth, Dr. Rose again began her work rounds with the students at 8:45 and Dr. Guan started the ward round at 9:40. Clara reported on her new patient first and Dr. Guan thought that it was too long. He spent twenty minutes discussing the case and five minutes on seeing the patient. Shortly after, I followed Clara as she assisted Dr. Rose in performing an urgent procedure on the patient, so we missed an hour of the ward rounds and rejoined the team at 11:10. When another student reported on a patient with terminal illness, Dr. Guan asked if any of the students had read the article he gave them the previous day. It was from a column in the

Annals of Internal Medicine called "On Being a Doctor" (Tierney 2011) about a medical student who cried after his patient died. Dr. Guan expressed surprise when he found out that none of the students had read it, remarking that it was only a page long. He guided the student to think about the patient's expectations and priorities. The team went for the radiology discussion at 11:28 for the image readings of three patients. It finished at 11:50 after which Dr. Guan debriefed the team quickly. Irving had to consult an infectious disease doctor who was very particular about details, so Dr. Guan demonstrated how to track the patient's medications in the chart using solid and broken lines of different colors. Then he accompanied Clara to see the patient who had the urgent procedure that morning. He warned Clara to monitor the patient's condition closely that afternoon. The ward rounds ended at 12:05 p.m. that day for the two of them.

The following week, Dr. Rose was not with the team for the first three days, so there were no work rounds. On Monday, the twelfth, the ward rounds started at 9:05 a.m. and Dr. Guan had his team report on the old patients first. He taught the students that they could place clues about the patient in their report so that others could deduce what was happening. He also emphasized that they should improve the contents of their one-minute reports according to their increased understanding of the patient each day and encouraged them to use medical terminologies. The last patient in the general medical ward was a new patient which Dr. Guan focused on that day. Irving presented the patient he had admitted the previous evening for change in mental status. Dr.

Guan interrupted to clarify and summarize the case at the beginning. Later when the discussion turned to the patient's neurological condition, he asked all the students in turn about causes for altered mental status and guided them to think about various possibilities. He told the students about different approaches to the workup for such patients, such as pathological or systemic, and mentioned the mnemonic, AEIOU-TIPS.[4] Then, Dr. Guan went through with Irving those factors that were more likely to contribute to the patient's condition using the mnemonic, the examinations they could perform to ascertain the cause, and the treatment they could provide. Nancy the nurse practitioner who was supervising Irving in the case joined in the discussion. When it seemed that the patient's condition might be with his kidneys, Dr. Guan went over the three major categories of causes for acute renal failure: pre-renal, renal or intrinsic, and post-renal. The entire discussion took slightly more than forty minutes. Then the team went to see the patient and Dr. Guan first attempted to arouse the patient but the latter remained unconscious. Dr. Guan then examined the patient together with Irving, focusing mainly on the neurological system. He explained to the patient's son about the situation and mentioned that they would be consulting a neurologist. The bedside visit took about ten minutes before the team went to other wards. At the radiology discussion later, Dr. Guan went through the patient's brain and

[4] The lists of what the alphabets stand for differ and the following is a compilation from various sources: A: alcohol, acidosis; E: endocrine, electrolytes, encephalopathy, epilepsy; I: insulin; O: oxygen, opiates, overdose; U: uremia; T: toxin, trauma, temperature (hypothermia); I: infection; P: psychosis, porphyria, pharmacy, poisoning; S: space-occupying lesion, subarachnoid hemorrhage, stroke, sepsis.

abdominal images with the radiologist. Altogether, they discussed four cases that day and the session lasted about twenty-five minutes. The team then went to see their last patient at another ward before they finished the round at 11:41 a.m.

Ward rounds began at 9:35 the next morning. Dr. Guan had Cody give a discharge summary of a patient of his and we shall see later what actually transpired. When he had to see an immunocompromised patient with a handful of people from the team, Dr. Guan appointed Ives to discuss with the rest his patient with infective endocarditis. Later, Dr. Guan encouraged Ives to improve his progress notes by demonstrating what he had learnt about the patient each day, since it was an interesting case, rather than copying the same contents mindlessly from the first day till the last. He emphasized that in order to express oneself well in writing, one must be able to think and say it out clearly. The radiology session was rather brief that day as they had only one patient to discuss and as usual after that, Dr. Guan reminded everyone of the work they each had to do and also to write their progress notes. The ward rounds ended at 11:30.

On Wednesday, the fourteenth, ward rounds started at 09:20. Dr. Guan went through the patients according to their bed numbers and there were three old patients before he came to a new patient of Carol's who was admitted for hemoptysis or coughing up blood. Dr. Guan tried to ascertain the source of bleeding and after eliciting the details from Carol, he questioned the rest of the team for other causes of bleeding and examinations that could be carried out. At the end,

he summarized the list of possibilities and told the team that he had used a "pathological approach". The discussion took seventeen minutes, after which they visited the patient and Dr. Guan conducted a rather thorough physical examination on the patient. He explained to the daughter in-law and gave some orders to Nancy before he left. The bedside visit took thirteen minutes but Dr. Guan spent a couple of minutes more outside the patient's room to go through the physical findings. Later, there was another new patient of Ida's but Dr. Guan only spent about ten minutes on the case. The radiology discussion went from 11:06 to 11:45 in which the images of two patients were discussed, including that of one of the new patients. After that, Dr. Guan held a short briefing on each person's tasks before leading the team to another meeting room on the same floor for a mini discussion on arterial blood gases, using data of the patient with altered mental status as an example. As usual, he would ask each student questions in turn, but if one did not know, he would fill in the answer. Dr. Guan finished the session at noon and before he left, he reminded the students to complete their orders and see their patients again later in the afternoon.

The following day, Dr. Rose joined the team for its ward rounds at 9:15. There were no new patients so Dr. Guan spread out the time evenly among all the patients. He finished the round at 10:45 and held a general discussion on the patients in the meeting room with the students. The resident, nurse practitioners, case manager, and clinical pharmacist temporarily left to deal with

other matters before rejoining the team. Clara asked Dr. Guan how to give intravenous fluids to patients for hydration and he assigned the interns to answer first before giving his response. At 11 o'clock, Maria reminded the group that it was time for the radiology discussion and the team went down to the first floor. They discussed the new images of the patient with hemoptysis and finished after a quarter of an hour. Dr. Guan went through the work for all the team again outside and the ward rounds ended at 11:25 a.m.

Situated Teaching: Legitimate Peripheral Participation

We have just seen a very good example of how a teaching attending conduct his ward rounds by making use of legitimate peripheral participation (Lave and Wenger 1991). Dr. Guan prefers to complete his ward rounds some time before noon in order for the team to process the orders before their lunch break, so he focuses in-depth on one or two cases each day. To do so, he sometimes begins the rounds half an hour earlier, or if the chief resident is present, have the latter go through the patients with the students first in order to facilitate their presentations later. Dr. Guan will arrive earlier at the hospital at six o'clock in the morning during the months he has teaching duties and stay back later in the evenings to go through the patients' charts and laboratory data so that he has a clear and complete grasp of their conditions. He will also visit some patients before the round and see them on his own in the afternoon. In this manner, he can

dispense of the service and social responsibilities and concentrate on teaching during the ward rounds proper. It also allows him to know which case(s) to focus on that day in order to finish the rounds on time. Compared to most junior teaching attendings who struggle to complete discussing and seeing all their patients during ward rounds every day and who feel frustrated that they often go overtime too much (for example, 12:30 p.m.) and guilty about not spending enough time on some patients, or the couple of physicians whose rounds are notorious for their lengths (often finishing after 1 p.m.) and causing much agony, hunger, and fatigue in their students, Dr. Guan's method of conducting the ward rounds selectively is rather efficient.[5] He states his expectations clearly at the beginning, such as the duration of the round, and recruits learners of different levels to assist him in teaching, for example, by having the students rehearse their case presentations with the chief resident first before they begin their ward rounds and having the intern with a patient who has infectious endocarditis teach his sub-peers about the disease. This not only makes the rounds more effective, it also expands the roles of the learners.[6]

In addition to the form of his ward rounds, Dr. Guan also pays attention to its contents. Usually, he will focus on a new patient or problem (such as altered mental status), but if there are

[5] Allocating time for instruction is one of the three keys to overall effectiveness of ward rounds, the other two being creating a climate of trust and concern, and establishing clinical credibility (Mattern, Weinholtz, and Friedman 1983). I was told that one of the attending's rounds was so long that the hospital had to relieve the doctor of her teaching duties.

[6] Mattern and his colleagues (1983) also noted that delegation of teaching responsibility may encourage self-directed learning and group development, and it is effective because it shifts the instruction from a directive to consultative approach.

none, he may teach about physical examination by conducting a complete inspection on a particular patient and going through the findings with the team, or he may select a certain topic from those the students recently encountered for a short discussion and teaching. He gives lots of practical and helpful tips and mnemonics to assist learning and when necessary, guides the students individually. He follows up on the assignments he gives to the students, such as reading or teaching, and gets them to practice how to present their patients repeatedly, first by giving a long presentation, and then at the end of the discussion, by doing a short summary. We shall see below the example where Dr. Guan coaches Cody how to present a patient who is about to be discharged. As is common in medical practice in Taiwan, both of them intersperse their sentences with English terminologies and descriptive words. I inserted some words for the sake of clarity of the sentence in square ([ ]) brackets and explanations such as the full names of those acronyms used in round (( )) ones. The time on the recording is shown in round brackets at the beginning to give readers a sense of how much time was taken.

> (00:55) Cody: Madam X has cellulitis, is currently using cefalexin, 250 milligrams, q6…[7]
> (01:09) Dr Guan: The patient will be discharged today, tell us the whole [story]; not too long, be concise. Tell us what happened: how she was treated, what happened after that, what we should do afterwards.
> (01:27) Cody: This patient has underlying bilateral breast cancer and had undergone bilateral mastectomies. She was admitted this time because the night before she had chills but she did not have other symptoms at that time. Later, she had high fever. At ten o'clock in the morning

[7] Cefalexin is an antibiotic that belongs to the cephalosporin group. The dosage given was 250 mg, every six hours.

of her admission, she found erythema on her anterior chest, wall, left upper arm, and forearm, so she came to our emergency room. Leukocytosis was found, so she was admitted. Blood culture was taken that day. She had past history of two episodes of cellulitis but those were because she had a wound with pus and *Streptococcus viridans* infection. During this admission, she had a wound but there was no pus or discharge. But the manifestations on her arm this time according to her, were similar to the previous episodes, so our impression was repeated cellulitis infection. Two days later, the result of her blood culture yielded GPC (Gram-positive cocci) chain, so it proves that she has cellulitis infection. Treatment was with cef-, cefazoline (first-generation cephalosporin antibiotic) and the response was very good: the redness subsided a lot after one day of treatment. Two days ago, we changed the cefazoline to oral cef-, uhm, cefalexin (another first-generation cephalosporin antibiotic in oral form) and she will be discharged today.

(03:55) Dr Guan: Summarize your report.

(04:00) Cody: This 78-year-old woman had bilateral breast cancer and had undergone bilateral mastectomies. She was admitted this time because of fever and chillness the night before admission and at ten o'clock the following morning after she woke up, she found erythematous changes in the anterior chest wall and left upper limb and she was admitted. From the blood culture and from her previous admissions with two past histories of cellulitis, the diagnosis this time was also cellulitis infection. So…

(04:36) Dr Guan: Even simpler. (Someone chuckled)

(04:39) Cody (after a deep breath): This is a 78-year-old woman with underlying bilateral breast cancer and undergone… surgery.

(04:46) Nellie (laughing): He's speaking faster and faster. (Others laughed) Don't speak faster but make it simpler.

(04:55) Cody: This 78-year-old woman had underlying bilateral breast cancer and was admitted this time due to cellulitis infection. After [been given] cefazoline treatment, the patient is expected to be discharged this morning and we'll give her oral cefalexin.

(05:13) Dr Guan: If I were you, I'll report this way: This is a 78-year-old woman, had bilateral breast cancer with mastectomies and chronic upper limb edema, was admitted a week ago due to cellulitis. Antibiotic treatment was with cefazoline because she's allergic to penicillin. After the second and third day, the redness, swelling, heat, and pain subsided markedly. The blood culture on the third day showed *Streptococcus*, [and] antibiotic was given parenterally. Today we changed it to the oral form and plan to discharge her. We suggest that she continue to take seven days of antibiotics and return for follow-up at our out-patient clinic.

(05:50) Dr Guan: So you keep the backbone and remove the rest. …Okay, very good…

Dr. Guan spoke with a soft, flat tone and his demeanor was quite friendly. He allowed Cody to present the patient without interruption and gave him a couple of chances to make his report more concise. At the end, he demonstrated how to present the case within a minute (he actually took less than forty seconds). The content of Cody's final report on the patient was not much different from his first presentation. One may infer that he did not gain much more information about the patient or her condition during her short stay in the hospital and that Cody's discharge note of the patient would probably be the same as his admission note. Compared to Cody's content, Dr. Guan's account was quite succinct and contained a lot of details, such as why the antibiotic cefazoline was given, and it also included information about the patient's hospital course, for example, how she responded to the treatment. Dr. Guan focuses on the reporting of the patients by the students because he believes that it trains a physician to think about the patient, from the condition he has, to the possible problems, the tests required to ascertain the diagnosis, and the treatment. Repetition is one of the keys of his teaching: at the end of the discussion for each patient, he will summarize the case and at the end of the ward round every day, he will go through the tasks each person on his team has to do. Another feature is the progressive increase in the level of expectation of the students' performances, particularly their case presentations and chart writing, starting from how to present a new case, how to report on an old patient, to how to give a discharge summary. He keeps everyone alert all the time during

the discussions by throwing questions randomly at the team, oftentimes not through verbally assigning someone to answer but by looking or pointing at a particular person after he has thrown out a query. This is in great contrast to the situation with most other attendings where the students often do not pay attention to the discussion if it is not their case because the doctor only directs questions to the person who is presenting the case. When being asked questions, Dr. Guan often does not answer immediately but will direct the query to others in the team first, such as the instance when he got the nurse practitioners and then the chief resident to answer a question. He will clarify, correct, and/or guide the students after they have replied, but if the student does not know the answer, he may either ask another person or provide the response himself.[8] His attitude is supportive and encouraging, and I had overheard a few students remarked that they did not feel that they were being "electrocuted" by Dr. Guan.[9]

Dr. Guan is the only teaching attending I observed who hands out reference materials to the students, such as a case report during the first few days so that students can learn how to describe a patient and the symptoms and how to present a case, and a short commentary by a doctor on whether it is appropriate for a medical student to express his emotions, specifically to cry, after

[8] Many scholars have noted the efficacy in using Socratic method in teaching, e.g. Bosk (1979) and Irby (1992).

[9] The word the students use is 電 which can mean "electricity" or "being electrocuted". It is an expression used by Taiwanese students to express their sentiment when being asked many questions by a teacher in an unfriendly manner. It is equivalent to "pimping" in U.S. medical schools (see Anspach 1988 and Brancati 1989 for example). Students tell me that pimping is not common in teaching hospitals now and I did not observe it at SOTH.

the passing away of his patient in front of the family when one of the students on his team had to take care of a terminally-ill patient. Despite the fact that the students did not read the reference materials immediately, one of the students was overheard a few days later mentioning to another that the second article was quite good. Dr. Guan is also one of the few doctors who makes regular use of the radiology teachings available and actively participates in the discussions, often asking questions of the radiologist about the patients' various diagnostic images. From my observations, which were supported by those of the case managers, I noticed that a couple of the teaching attendings almost never go to the radiology discussion, most would utilize sometimes, while only a few made use of it often. However, most teaching attendings would let the students ask questions and only engage with the radiologist in cases where they were not sure about the diagnostic reading. Dr. Guan, however, actively participates in the discussions and asks lots of questions. It is as if he also places himself in the position of a "learner" with respect to the radiologist who is the teacher in the situation, unlike most other physicians who still see themselves as a "teacher" during the radiology discussions. I do not know if Dr. Guan's voracious appetite for knowledge makes him well-versed in many subjects, even those outside his specialty, but I was rather impressed that he could make good use of the wide range of diseases the patients presented as teaching materials for the learners.

During my interviews with each of the teaching physicians toward the end of my fieldwork, I was struck by how many of them brought up the fact that they would think about their teaching and how to improve it.[10] For example, they would look through all their patients' information in the morning before the ward rounds to understand their current condition and to know which one(s) they had to pay close attention to. Those who did not follow the order of room numbers for their patient discussions would also determine the sequence in which to carry out the session and those cases they wanted to focus on in their discussion with the students. Not all the teaching attendings could make it to the hospital earlier but all would invariably stay back later to fulfill their extra duties and responsibilities. However, from my on-site observation, I found that it was not enough to think about what to teach. The better teachers were also aware of how they taught and the students' reactions to their teaching.[11] I arrived at this conclusion because I observed that even though one of the attendings would think about what to teach by selecting certain cases for in-depth discussion every day, he would only focus his attention and teaching on the particular person who was taking care of the patient and neglect others in the discussion. As a result, the rest of his team was usually quite inattentive to the dialogue and the sleep-deprived ones might even grab a few minutes of respite during the period. When the discussions got too

[10] Indeed, as many scholars have found, reflection is an important feature of good teachers (e.g. Schön 1983; Wilson, L. Shulman, and Richert 1987). Irby (1992) further classified the subjects of thinking clinicans may have after a ward round into reflections on teaching and themselves (teachers), on learners, and about patients.

[11] In Irby's (1992) study, most clinicans state that they diagnose the learner's comprehension by their level of confidence, facility with words, smoothness of presentation, and good understanding of what is going on.

long, they would become restless. Moreover, because the attending only focused on deliberating about medical knowledge and did not correct the students about how they presented their cases, Maria and I noted with some surprise that a couple of the students became lax and even sloppy about how they presented their cases compared to their performance at the end of the previous month with another team. In another doctor who would put many questions to his group but did not wait for the students to answer, we observed that after a couple of days, his disciples quickly learned that they did not have to reply at all.[12] Because he spoke very fast, the students told me that they could not understand what he was saying on the first day, but they found that it did not matter because they were not expected to say anything. In my opinion, Dr. Guan's method of holding the ward rounds is a perfect example of legitimate peripheral participation from how he involves all members of his team by delegating minor teaching tasks to the interns and residents, not answering questions straight-away but eliciting what others know first, and progressively increasing the order of difficulty of learning through raising the level of expectation of case report from week to week.

Although to those who more experienced, such as Maria the case manager, Shirley the secretary for clerkship training, and the senior teaching staff at SOTH, Dr. Guan's bedside

[12] When I timed the durations of the pauses this attending took, I was surprised to find that they were about the same as those by other teachers, including Dr. Guan. I concluded that it might be the way the doctor spoke that subtly conveyed to his audience that he did not expect an answer from them.

teaching was one of the best, it was not how some of the students perceived it. I once overheard a student who had him as teaching attending for her first month complaining that she could not understand why Dr. Guan only focused on their oral presentations when she did not know yet how to diagnose her patients' problems and prescribe medications for treatment of her patients, nor how to handle simple complaints while she was on duty. Her classmate who was doing her surgical rotation told her that she felt the same too when she had Dr. Guan before, but during her second month in internal medicine, she began to see that his teaching was about training them in differential diagnoses, i.e. to think in a systematic way about a patient's presenting problems in order to arrive at a correct judgment. Therefore, to novices just beginning to learn their ropes in clinical practice, Dr. Guan's method of teaching might seem too advanced for them. I believe students may benefit more from his teaching during their last month in internal medicine or that he could be better teaching more senior students such as interns and residents. However, what that classmate in surgery shared illustrates perfectly the nature of legitimate peripheral participation where those relative old-timers teach the newcomers about what they have learned.

I also observed that students who were beginning their medical training often found those physicians who were like "mother hens" to them more helpful. It is not surprising that most of these teaching attendings were women. In particular, there were two female attendings at SOTH who would tell the students in detail what they had to pay attention to during their work and the

ward rounds on the first day,[13] and after that they would still constantly and tirelessly remind them about those facts. They would watch out about the students' situation and warn them about certain problems they might encounter.[14] Maria the case manager was also the same and to a slightly lesser extent, Shirley the secretary for clerkship training and Dr. Meng who was in-charge of the medical training program. Yet, ironically, one of the two women teaching attendings had just assumed the teaching role and because her field was rather specialized and different from the majority of the diseases the patients admitted to the general medical ward had, she felt she was incompetent and unsuitable for teaching. She was so unsure of her ability that she went to see Prof. Tang a few times wanting to be relieved of her teaching duty during the period of my fieldwork. In my opinion, novices do not really require very advanced medical knowledge but they need someone to literally hold their hands and guide them in their first steps on the clinical path, so I believe that the young woman attending plays an important role during the students' first month in internal medicine.[15]

One of the major problems novices in medicine encounter is the different styles of teaching and requirements about the ward rounds or oral presentations various attendings have of them.

[13] Mattern, Weinholtz, and Friedman (1983) noted the importance of initial orientation to learners.

[14] Scholars studying classroom and clinical settings have noted that a characteristic of expert teachers is their knowledge of the learners' understanding and misconceptions at each level of training, e.g. Putnam 1987; Wilson, L. Shulman, and Richert 1987; Borko and Livingston 1989; Sabers, Cushing, and Berliner 1991; Irby 1992).

[15] Ramani et al. (2003) also noted that some teachers are not confident about their teaching abilities and require reassurance that they have enough bedside skills to teach medical students.

The students are often confused by what is expected of them by different physicians and in almost all their feedbacks, they will express hope that the method of teaching and requirements be standardized among their teachers. Concerning this, the hospital training staff thinks that in reality, students will encounter many different physicians throughout their medical career who have their own individual styles of teaching and demands. Moreover, what suits a particular student may not be good for another. Therefore, it is not realistic or ideal to attempt to conform their physicians but rather, the best way is to teach students how to interact with and react to various teachers so that they can obtain the most learning out of everyone.

Another Exemplary Form of Ward Rounds: Dr. Han

We have seen a good form of ward rounds where the teaching attending selectively focuses on a couple of topics each day and teaches about case presentations in a progressive manner. We shall now look at how another physician demonstrates the best of the "art of medicine". Doctor Han is a hematologist in his early fifties who is also quite well-liked by students. They find Dr. Han more "on par" with them in terms of the contents of his teaching, i.e. that he understands what level they are at and the problems they face at that moment and that he meets them at where they are to help them. During the second time I observed him, Maria the case manager and I both noticed that Dr. Han showed his sense of humor more than he did during his previous round of

teaching half a year ago and that he adapted his teaching to suit the varied personalities of the students in his team. While going through my notes, I was struck by the vast wealth of information he shared with the students about the people and local culture, and alerted them to the psychosocial issues of some patients.

Dr. Han prefers to have his team report on all the patients first before visiting them at their rooms in the ward and he usually begins the ward discussions with the new patients and those who are critically ill before going through the old patients. He limits the duration of his ward rounds to two or two-and-a-half hours and usually finishes between 11:30 a.m. and noon. The second time I observed him, the other teaching attending preferred to discuss and see each patient one at a time, so Dr. Han was given use of the meeting room in the ward every day. That month, the students in his team were Cathy, Clara, and Colin. Clara had been in Dr. Guan's team two month before that. Since the students were already familiar with the hospital, they started their first day in their new team directly. However, the interns from QEMS, Ian and Ivy, were new, so they joined the team on the second day after their orientation. With them were two nurse practitioners, Nancy and Naomi, and Maria the case manager. Dr. Han only utilized the radiology discussions sporadically during the first week but more often later. In the following, I shall focus on how he interacted with his patients and students during his ward rounds.

On the first day of the month which was a Tuesday, the clerks had already chosen a patient each to take care of earlier that morning and the rest of the patients were under the charges of the two nurse practitioners. Dr. Han arrived at the ward at 9:35 a.m. and went through the patient list. He would sometimes stop to ask the students questions, summarize the patient's situation after a report, and go through the problem list. Although it was the first day, Dr. Han seemed to grasp the patients' conditions rather well already, as he reminded Cathy about the increased potassium level in her patient's laboratory result. Dr. Han received a call and shortly after that, he told Naomi to look up the past images of the patient under discussion while he left for a "social call". The last case was a new patient who arrived that morning and Colin reported her history minus the physical examination that he did not have time to perform. The discussions ended before 11 a.m. and the team went to see the patients. When the team visited the new patient, Dr. Han inquired about her past history and performed a simple physical. An elderly man complained about his illness for a long time but Dr. Han listened patiently and tried to console him. The team finished seeing the last patient at a quarter before noon and Naomi reminded Dr. Han about the radiology session where they discussed Clara's patient. The discussion finished at 11:55 and after answering a question by Naomi, Dr. Han told the team to familiarize themselves with their patients' condition before he left by the stairs. The rest took the lift up to the ward and Nancy told Maria that Dr. Han mentioned that their ward rounds was too long that day and he wanted it

to end by 11:30 in the future. Cathy remarked that Dr. Han did not seem hurried and Clara thought that it might be due to age or experience as Dr. Han was quite thorough. The students then began to compare the teaching styles of other physicians they had encountered.

The next day the two interns, Ian and Ivy, joined the team and they were assigned a patient each. Dr. Han went through the clerks' patients before those of the interns and lastly, the nurse practitioners, spending progressively less time on each. He told Colin to report his patient's history in detail because the interns did not know about her condition. Later, Dr. Han explained about the mechanisms for the distribution of intra- and extracellular fluids to illustrate the choice of intravenous fluid for the patient. My impression from the discussion was that Colin had checked the information quite thoroughly, Cathy could ask intelligent questions while Clara asked general questions, and the interns had not spoken yet though Ian joined in the discussion at the end. Next, Cathy reported about her patient and I noted that she was more organized and detailed in her report compared to yesterday. Clara supplemented some information about the patient since she had cared for him previously. Unlike yesterday, Dr. Han did not refer to his notes anymore but he was very clear about the patients' conditions. After a quarter of an hour, he went on to Clara's patient followed by Ian's. At one point, Cathy asked about electrolyte levels and Dr. Han wanted her to look up the information first. During the discussion, Dr. Han would sometimes return to previous cases and drop a word or two to the person in-charge. The briefings

ended at 10:45 and Dr. Han reminded the team that Clara's patient's condition might worsen suddenly and warned her about the side effect of large doses of diuretics on hearing, so Clara should inquire everyday if the patient had tinnitus or ringing in the ears. Maria told Dr. Han that a son of one of the patients was waiting to see him so they visited the patient first. When they saw Clara's patient, Dr. Han asked him about various symptoms concerning his disease and potential side effects from his medications and listened to his heart. With the patient who was his distant relative, Dr. Han told him in Taiwanese, "Brother, you can do it!"[16] before leaving. The round ended at 11:30 without the radiology discussion.

On Thursday, the third, Dr. Han went to see a patient in the ward first before showing up at the meeting room ten minutes later at 9:40 a.m. Ian reported on his new patient in detail and Dr. Han summarized the case. The patient was terminal and Dr. Han asked a couple of key questions, such as what could be done and who the main carer was. After twenty minutes, Ivy reported on another new patient and Ian and Cathy joined in the discussion. Cathy presented her patient next and Dr. Han demonstrated how to report a short past history before asking her some questions. He drilled the students about the problem lists of their old patients. The discussion ended at 10:50 and the team visited the patients. As they waited for a patient who was in the bathroom, Dr. Han talked to the team about the interpretation of complete blood count (CBC) data. Ian's new

[16] The original phrase used was 加油, which literally means to "add oil". In English the closest meanings would be, "Go for it", "Keep it up", "Hang in there", or "Cheer up".

patient was breathing through an oxygen cannula and Dr. Han inquired who was caring for her and her past infections. One patient was away for a test and the ward rounds finished at 11:30. Dr. Han asked the team for topics they would like to learn about. Ian and Cathy placed their requests for obstructive pneumonitis and water and electrolytes, which Dr. Han agreed but he told Cathy to look for a case with hyponatremia (low sodium level in the blood) so that he could discuss it with Colin's patient who had hypercalcemia (high blood calcium).

On the following day, there were no new patients and Dr. Han spent about ten minutes on the discussion of each patient. He warned the team to be more alert about Colin's patient whose condition might turn critical and asked if any of the students had encountered the death of a patient. None of the clerks had even though they had heard about those of their classmates' patients. Dr. Han reminded the team of the importance of understanding the mood and expectations of terminally-ill patients in addition to focusing on the medical problems, and also not neglecting the emotions of the caregivers. Clara was on leave so Dr. Han presented her patient. He used the case to discuss about fluid and electrolytes which was the topic Cathy had requested. While talking, Dr. Han looked at those students next to and across from him but none made eye contact with him. However, the students participated quite actively in the discussion. Dr. Han wrote and drew on a piece of paper but he did not notice that Colin's view was blocked. He spent about twenty minutes on the topic. Before they visited the patients, Naomi informed Dr.

Han that they had two new patients. Later, Dr. Han was overheard on the phone turning down another new patient because he already had two new patients and was without a resident. He explained to the team that he would get "schizophrenia" from teaching.[17] The patient visits ended at 11:45 and Nancy asked Dr. Han about her new patient. Dr. Han again warned the team about Colin's patient. Ivy gave him a form of absence to sign so that she could return to her school on Monday for the selection for "Best intern" and Dr. Han praised her about it.

The following Monday was the seventh and Ivy was on leave. The nurse practitioners had given the new patients to Ian and Cathy to take care for under their supervision. Dr. Han began with Ian's new patient. He asked a lot of questions and Ian missed out reporting about the patient's vital signs and blood sugar. Dr. Han emphasized again the importance of understanding the expectations of the patient and family in order to determine the degree of aggressiveness in the treatment. Then he went through the patient's problem list and shared with the team about the patient's family background. The discussion ended after twenty-five minutes. Next, Cathy reported about her new patient with liver abscess and Dr. Han also asked many questions about the patient's history and examination. He decided to order a colonoscopy examination for the patient again even though the latter had it at another hospital a couple of months ago because the images were not available. Dr. Han went through the patient's problem list with Cathy and

[17] I believe Dr. Han meant that he would be so stressed by the patient load that he would suffer a mental breakdown.

taught her how to discern those problems that were more urgent and serious from the lesser ones. He spent about twenty minutes on the patient before going through the rest. The patient discussions ended at 11 a.m. and the team went for the radiology discussion. When Dr. Han left to handle some matters briefly, Ian said that he felt bad about not making his report on his new patient well. Nancy and Naomi comforted him that different teaching attendings have different emphases about case presentations. Dr. Han rejoined the team shortly before the radiologist came in and after the discussion, they went to see the patients. As before, Dr. Han was quite patient with them and would sit down next to them and even hold their hands while talking to them. The patient visits ended at noon and Dr. Han went through with the team their questions.

The next day, Dr. Han first talked for five minutes about how to write the progress notes with the students. He had been looking through theirs and he advised the students not to "copy and paste" but to revise their old notes as they might have missed out certain new problems or forget to summarize the patient's condition. He also reminded the students to compare the patient's condition with that of the previous day in Objective section[18] and praised Clara for summarizing her patient's condition well in a narrative manner. In the end, Dr. Han admitted with a laugh that he personally disliked to "copy and paste" but another teaching attending said

[18] Most hospitals in Taiwan adopt the problem-oriented medical record (POMR) which lists the patient's condition each day in the form of SOAP, an acronym for subjective, objective, assessment, and plan. S refers to the subjective information obtained from the patient or caregiver, O stands for the objective data collected through observation, physical examination, and diagnostic studies, A indicates the assessment of the patient's status, while P designates the plan for patient care. Readers may refer to Maretzki (1985) for a description of POMR.

that he could not live without it, so Dr. Han advised the students to use the function wisely and avoid writing anything unnecessary or redundant. After that, Ian and Cathy reported on their newer patients. When Cathy questioned the necessity of having her patient receive another colonoscopy, Dr. Han explained the reasons patient. Dr. Han had a couple of phone calls about new patients and he tried to refuse accepting them, citing the reason that he had two critical patients. The patient discussion ended at 11:40 and the team went to see the patients. Dr. Han persuaded Cathy's patient with liver abscess to have another colonoscopy and an endoscopy examination under general anesthesia to determine the cause of her anemia.

On Wednesday the ninth, Dr. Han arrived at the ward at 9:45 and said that his pressure was lighter that day because two patients had been discharged. Ian first reported about his newer patient and Dr. Han interrupted to tell him to give a short description of the patient. Amidst his confusion, Ian had the patient's age wrong. After a while, Dr. Han told Ian that he should write a synopsis about his patient as if he were telling a story. Ian then attempted to summarize the patient's course of illness during admission but Dr. Han thought that it was too long, so he demonstrated a concise version. Dr. Han explained that since everyone had seen the patient a couple of times already, Ian should keep his report short. However, he lauded Ian twice for his well-written progress notes. He again reminded the team not to copy and paste, and to compare the differences in the patient's condition from that of the previous day in their progress notes.

Then Dr. Han was called away to handle an urgent matter which I will describe later. After his return, he spent twenty minutes discussing Clara's new patient. Next, Cathy reported on the patient with liver abscess and Dr. Han remarked that she did not mention in her progress note that the patient's pain and fever had improved after drainage of the abscess. Cathy refuted that she did and Dr. Han ceded that he would look through her note again. My feeling then was that Cathy was rather self-confident and did not like to be corrected. Cathy continued with the patient's other problems and Dr. Han guided and taught her how to document the findings and express her thoughts and plans clearly. The patient discussions ended at 11:42 and the team left to see the patients. After the ward rounds ended at 12:15, Cathy talked to Dr. Han briefly about her patient's examinations.

The next day, the team had a visiting professor who conducted the ward rounds so I shall not dwell on the details. On Friday, the eleventh, Dr. Han went through the patients according to their ward number. As usual, he would ask questions and discuss about the care and management of each patient. At the end of the discussion about Clara's recent patient whose condition was not good, Dr. Han reminded her to boost the patient's morale and to talk to the family often. Later, Dr. Han asked Cathy to report on her new patient but the latter replied that they should finish with all the old patients first. Dr. Han did not react to Cathy's act of disobedience but had Ivy report on her teacher patient next. He told the team that the patient was worried about the change

in her environment from her home to the hospital and attributed it to her profession by explaining that he had found most teachers to have rather strong personalities because they were used to giving orders to their students. After the team finished discussing the old patients, Ivy reported on her new patient at another ward. Dr. Han helped fill in some of the history and held a brief discussion about the diagnosis and treatment. Finally, Cathy reported on her new patient who had electrolyte imbalances. When Dr. Han explained about fluid provision in various scenarios, Cathy passed him her pen and the back of her paper to illustrate and most of the team had to stand up to see. The discussion lasted forty minutes after which the team went to see the patients. On their way out to the ward, Clara privately congratulated Cathy for her good presentation. The patient visits were unremarkable, except for a patient who thanked Dr. Han for his care, upon which the latter replied that it was the team's effort. The ward rounds ended at 12:05 and Dr. Han reviewed the order for Clara's newer patient and answered Nancy's and Ian's questions.

Teaching the Art of Medicine

In many ways, Dr. Han conducts his ward rounds in the same manner as Dr. Guan, for example he will arrive at the hospital earlier during his teaching month to check up the patients beforehand, visit some of them on his own, and focus on one to two cases each day so that he can finish the rounds on time. However, Dr. Han does not keep to his expected finishing time that

well. Like Dr. Guan and other teaching attendings, Dr. Han will share with the students tips on learning and clinical practice, for example, to think about the discharge criteria at the time of admission of a patient and the importance of settling the patients' appetites, bowel movements, and sleep. He will also correct the students' use of English and pronunciations, remind them to report specific numbers for the laboratory results, drill them about listing the patients' problems, and demonstrate how to summarize a patient's case. Also like other good teaching attendings, Dr. Han has different weekly learning objectives for his students. At the beginning, he allows them to know their patients well and during the second week, he focuses on their oral and written communication skills. Yet, some students could not cope with Dr. Han's "new" standards and Ian the intern complained about how Dr. Han picked on his case presentations during the second week when the latter was quite fine with it before. I noticed that Ian was rather conscientious about his work and thought perhaps it would be better if Dr. Han had explained what he was doing to the students first. Similar to some of his colleagues, Dr. Han will draw the students' attention to the presence and roles of other health professionals and appeal to them to be considerate of the workload others may have because of their orders. For example, once when the discussion was about ascertaining a patient's fluid status, he advised Ian to check the patient's body weight instead of relying on urine output measurements and he reminded the team not to prescribe a "record I/O" (input and output) order for too long as it would greatly burden

the work of the nurses. He will also warn his team to plan ahead before the weekends when there is less manpower, for example in arranging for tests and discharging patients, and he educates patients and their families about not requesting those doctors on-duty to explain about the patients' conditions since they are not those responsible for their care. He respects the expertise of other health professionals and consults with the clinical pharmacist frequently, such as the appropriate dosage of antibiotics for the patient with liver abscess.[19]

As mentioned at the beginning, students find Dr. Han more "on par" with them. This is because Dr. Han not only emphasizes on presentation or chart writing skills, he also teaches the students the practicalities of patient care, such as what and how much fluids to give to a particular patient and the side effects to watch out for in a patient taking a certain medicine. He will also alert the team to those patients whose conditions might worsen suddenly. Perhaps Dr. Han seems more "human" to the students because he will share his own stories with them and the stresses he is experiencing.

As mentioned, I believe that Dr. Han's attention to the psychosocial aspects of individual patients and his observations about the culture, history, and society in general are quite unique. For example, when Dr. Han saw an elderly patient for the first time, he congratulated him for passing his "rice (eighty-eighth) birthday" and he deduced that another patient was Hakka from

[19] This is in contrast with the finding of Boufford (1978) about the lack of involvement of other health care professionals in clinical learning.

her surname and her name that sounded like “younger sister”, a common name for Hakka women. During bedside visits Dr. Han will sit down next to the patients to talk with them and sometimes he will hold their hands. He will listen patiently and answer the patients and their family’s questions. With a patient who was a retired teacher, Dr. Han addressed her as “Teacher Wang” and chatted with her about her teaching experiences. He later noted that she “looked defeated” by her illness after she developed a severe complication. With another patient, Dr. Han remarked to her daughter that the patient’s seemed quite optimistic and the latter affirmed his observation. Dr. Han constantly reminds the team the importance of understanding the mood and expectations of chronic and terminally-ill patients and not neglecting the emotions of their caregivers in addition to focusing on their medical problems. A notable example was an elderly woman who had a rather hard life in the past and was disappointed that she had fallen ill just as she was able to relax and enjoy her life. Another instance was a man who was depressed about the change in his physical appearance after his prolonged illness. When Clara had a patient whose condition was not good, Dr. Han reminded her to boost the patient’s morale and to talk to her family often. He often encouraged his disciples to chat with their patients and advised them not to worry about the topic of conversation but to just listen. Once he shared his own experience with a patient who had high levels of calcium, raising concerns about the possibility of multiple myeloma, but during a casual conversation with the patient, the latter revealed that he had taken more vitamin

D supplements. He wished to emphasize the importance of listening to the patients even for someone like him with twenty years of clinical practice. With another patient of Cathy's who had a differential attitude towards his attending physician and the rest of the staff, Dr. Han initially advised the team to foster a partnership with the patient. However, on the third time the nurse practitioner and Cathy complained about his bad behavior towards them, he took action. At the bedside, Dr. Han chatted with the patient for a while before he formally introduced Cathy to the patient by saying, "This is Student Lee. She will be a 'big' (great, renowned) doctor in the future. I have more than ten patients and I have to rely on her to help me take care of all of them well." Mattern, Weinholtz, and Friedman (1983) believed that concern for psychological issues in clinical education is best conveyed by example, and the following was how Dr. Han interacted with the family of a terminal patient:

> When they visited Colin's patient, Dr. Han examined the patient and observed for a while without saying anything. He talked to the patient's son outside the room while Colin and Cathy stayed with her. Dr. Han gently explained the patient's grave situation to the son and gave him time to digest the information. The son asked some questions and then started to cry. Maria gave him a tissue while Dr. Han allowed him to talk about the misfortunes that had befallen the family during the past year. Dr. Han then probed about the patient's role in the family which confirmed his observation that she was the pillar of the household. The patient's husband came out of the room and he requested that the patient not be told of her condition. Dr. Han replied that the patient needed to know so that she could arrange her affairs and that it would be better to inform her earlier. Altogether, he spent about fifteen minutes with the patient's son and husband.

During this particular teaching period, Dr. Han showed his sense of humor more in his interactions with students and patients. Unlike those who play with the language (especially through using puns), Dr. Han applies humor according to the situation. I observed many instances where he made the team laugh with his timely, sharp or witty remarks or observations about a patient or student. For example, when he advised a patient to get down and walk and the latter sat up immediately, Dr. Han observed in a light-hearted manner that the patient was a bit impatient. Another time he joked that a patient had bowel movements "three times a day like meals" which incited laughter in everyone. Once Dr. Han teased Colin by remarking that he should perform well during his case presentation because he had plenty of oxygen earlier. Dr. Han was referring to the morning meeting that day which was a talk about non-invasive ventilation and Colin had volunteered to be the model to wear a BiPAP (bi-level positive airway pressure) mask and had been given oxygen. When Ivy reported that her patient's constipation was relieved before she could perform a manual excavation, Dr. Han laughed and shared a story of how some patients who had no bowel movements for days would be so desperate and call for an ambulance but upon arrival, they would head straight to the bathroom to relieve themselves after the bumping in the vehicle during the ride so they ended up not having to see a doctor after all. Dr. Han explained to me later when I inquired about it that his humor stems from a respect

for others. I believe that it requires one to be more open-minded and receptive about others' perspective and to alternate possibilities in order to see a situation in a more positive mode.

Maria and I also observed that Dr. Han had grasped the students' personalities quite well by the second week, particularly that of Cathy and Colin, and he would adjust the way he taught according to their different qualities. With Colin, whom his previous attendings described as "sunny" (i.e. happy and outgoing) and "likeable", and who did not mind being teased, Dr. Han would joke with him and drill him with a lot of questions. During my interview with Dr. Han two months later, he agreed with my observations and told me that with that team of students, he had used Colin's presentations as examples for teaching to the rest of the team. With Cathy, Dr. Han saw that she did not like to be corrected publicly, for example she would keep quiet or say "Maybe" or refute him, so he later refrained from doing so in front of others but instead did it privately, such as through correcting her progress notes or by talking to her alone. Dr. Han is also quick to shower praises on the students, much more than other physicians. The following are some of my observations about his interaction with different students:

> Day 8: Dr. Han praised Clara for summarizing her patient's condition in a narrative manner.
>
> Day 9: Dr. Han lauded Ian twice for his well-written progress notes, citing that the latter had noted that after the patient's nasogastric tube was removed, she did not experience vomiting which meant that there was no obstruction in her digestive system… Cathy reported on her other patient. She gave a half-minute summary of the patient before listing his problems and Dr. Han told the rest of the team that that was how they should introduce their old patients.

> Day 11: Dr. Han corrected Colin about the diagnosis of his patient but was quick to praise him when he made a good point… Dr. Han teased Ivy about being very well-prepared for her case presentations… Cathy presented her new patient who had electrolyte imbalances and Dr. Han quizzed her about the possible reasons, interpretation of the laboratory data, and management. Some of the questions were topics Dr. Han had talked about with the team the previous week and Cathy could answer most of them, winning the attending's praise for her correct interpretation of the patient's urine osmolality.

I was also impressed by how Dr. Han allowed his students room for autonomy and growth, as shown through the occasion when Colin struggled to explain a certain procedure and Nellie wanted to help him, but Dr. Han stopped the latter to let Colin continue. Dr. Han was also interested about the students' background. Once at the end of the ward rounds, he mentioned that he had read the students' biographical data and were impressed that they had been overseas to institutions such as the University of California in San Diego and Massachusetts Institute of Technology.[20] I believe that most attending physicians read up about their students before they begin their teaching duties but Dr. Han was one of two doctors who told the students about it. I think it conveys to the students that their teacher is interested in knowing them as individuals.[21]

In terms of teaching, Dr. Han may be more "old school" than Dr. Guan because instead of using questions and answers, he mostly just provides the information to the students. When illustrating his point using writing or drawings, he does not observe if his audience's view may

[20] Medical students in Taiwan nowadays have many opportunities to go abroad on exchange visits during their vacation or clinical training either through their schools, extracurricular programs, or the Federation of Medical Students in Taiwan, which is a member of the International Federation of Medical Students' Association.

[21] Deresiewicz (2014) found that people remember those teachers who challenge and care about them.

be blocked. Although Dr. Han will try to make eye contact with his audience while teaching, he is often unsuccessful in gaining it. Readers should remember that Dr. Han is at least a decade older than Dr. Guan. Dr. Han admitted to me that he was not good at conducting physical examinations as he was trained during a time when there was increasing reliance on diagnostic instruments and negligence about physical diagnosis and as a result, he does not teach it well. However, he told me that his interest is in understanding the physiological mechanisms of the body which he believes is his forte. Despite this shortcoming, what stands out from Dr. Han's clinical teaching is his attention to other aspects of care and healing besides the biophysical, his fine sense of humor, his very down-to-earth personality whereby he does not hide the fact from his team that he is under a lot of stress from his clinical and teaching duties although he never once shows it in front of his patients. I particularly admired how he managed an unexpected event which epitomizes a fine example of an expert teacher.

The critical incident happened on the ninth day when Dr. Han had a call about a patient in the middle of the ward rounds. It turned out that Cathy had done an electrocardiogram (EKG) for a patient with liver abscess who was receiving both an endoscopy and colonoscopy examination that morning but she had not placed the printout in the patient's chart even though she had noted the findings on the computer. Cathy might not have been aware that because the EKG is a measure of the heart's electrical conduction activities and is displayed in twelve waveforms on a

graph paper, it is important for a clinician to see the actual printout to interpret the patient's heart condition, even though modern instruments are able to automatically analyze the patterns and provide a rudimentary result. The EKG is part of the routine examination for elderly patients receiving general anesthesia in Taiwan, and as it turned out, the patient's EKG was not normal. It showed up in the examination room when the staff placed the heart monitors on the patient. However, Dr. Han explained over the phone that he thought it was an incidental finding since the patient did not have any risk factors or experiences of heart attack. After Dr. Han had a second call about it, he took the printout to the examination room himself. He returned after ten minutes, explaining that he first sought the expert opinion about the EKG from a senior cardiologist before he persuaded the doctor performing the scopes and the anesthesiologist that the patient's heart condition was all right for her to receive the examinations under general anesthesia. In addition to winning the doctors over, Dr. Han understood that he had another group of people to face in the situation, i.e. the patient and her daughter, so he also apologized to them at the examination room. In that manner, he defused the crisis. Dr. Han's voice was flat and emotionless when he recounted what had happened later on to the team. He resumed the patient discussions without mentioning the incident again, even when they came to that of the particular patient. He joked with other students in his usual manner and praised Cathy for giving a good summary about her patient. However, at the end of the rounds, Dr. Han allowed himself to vent

his emotions a bit to the nurse practitioners and the head nurse. From his conversation with the head nurse, I discerned how Dr. Han managed not to lose his temper in the situation. He tried to look at the situation from the perspective of the other parties to understand their concerns and worries, and why they were upset. With Cathy, Dr. Han taught her how she should have documented her interpretation of the EKG results and what she should have done. He did it in his usual tone of voice and never once reproached Cathy for her mistake. Later that day, Dr. Han even gave her an opportunity to make up to the patient. At lunch, he informed Cathy that her patient's colonoscopy examination was negative for cancer and he wanted her to tell the patient the good news by saying, "I'll let you share the patient's joy."

Conclusion

The ward rounds, as a signature pedagogy of clinical teaching, render the person (learners) and process visible, and is interdependent and collaborative (L. Schulman 2005). In the same manner as the attendings who have multiple roles, including team leader, clinical supervisor, and primary physician (Cooke, Irby, and O'Brien 2010), the learners (e.g. medical students, interns, residents) also have to attend to various duties and play different roles at the same time, and members of the ward team engage with one another to co-participate in the activities (Lave and Wenger 1991). Similar to those expert clinicians in Irby's (1992) study, the two physicians we

examined in this chapter planned their teaching carefully before the ward rounds, diagnosed the learners' understanding and displayed interactive thinking and teaching during the rounds, and reflect on them after rounds. They were able to focus the attention of the entire group, establish the learners as active participants, and allow them to present without fear of constant distraction and public exposure of ignorance (Mattern, Weinholtz, and Friedman 1983). Their successful engagement of all members of the team in full participation during ward rounds resulted in the best "knowing" in all the learners. I believe that they exemplified the qualities of a good teacher Confucius personally demonstrated twenty-five centuries ago, including those two in the quote at the beginning of the chapter: teaching in a patient, step-wise, and systematic manner, and according to the personalities and characteristics of the learners.

Chapter Five: The Professor Rounds

內行看門道，外行看熱鬧
While the connoisseur recognizes the artistry, the layman [simply] enjoys the show
– Chinese saying

The Professors Rounds is special type of formal clinical teaching at SOTH. As in the previous chapter, I shall present what I thought to be two best instances of such a teaching in their entirety and analyze their characteristics. The Professors Rounds happen on alternate Thursday mornings from 7:30 a.m. till 8:30 a.m. and is mainly conducted by three mentors who had returned from the United States. The rounds allow the junior staff to learn from senior physicians through an in-depth discussion about a certain patient. Usually a clerk or intern will first report the case and the professor will discuss it. If the patient is available, the group will see him or her in the ward before returning to the meeting room for further deliberation. The following was the first Professor Rounds the group had and it was conducted by a rheumatologist in his late sixties.

Example by Professor Rao

Part 1: Case report

Ivan the intern reported his case about an eighty-five years old woman with a history of hypertension under control by medications who presented with a sudden onset of breathlessness two weeks ago. He described her symptoms, aggravating and relieving factors, and negative symptoms. Ivan was about to describe the findings of her chest X-ray at a local hospital when Prof. Rao interrupted him by saying that he was going too fast. He reminded the audience of the patient's age and inquired if her history was reliable. When Ivan replied in affirmative, Prof. Rao continued by summarizing the patient's symptoms and then questioned what the most and least possible causes of her condition were. A student offered an answer but Prof. Rao did not respond. He continued to ask what the possible physiological mechanisms to the patient's condition might be and urged the team to think about the differential diagnoses from information gleaned from the history. Turning to Ivan, Prof. Rao commented that he had made a very good report by ruling out the possibilities of cardiovascular, pulmonary, infectious, and gastrointestinal causes to the patient's condition. However, he reminded Ivan that he was telling a story and therefore should not jump too fast to the tests. Then Prof. Rao asked his audience if they had any questions or comments about the patient's history. They did not, so he asked Ivan to continue with his report.

Ivan offered information about the patient's physical findings upon admission at SOTH: "Even though the patient said she did not have fever at home, her vital signs on arrival showed that her body temperature was 38 degrees Celsius, pulse: 96 per minute. Her breathing was faster at 26 per minute, blood pressure: 144/80. Physical examination showed that the conjunctiva was pink, there were no lymph nodes in the neck region. For the heart, it was regular heart beat and no murmur was heard. Chest examination: bilateral symmetrical expansion with rales at the left lower lobe. There was no particular finding for the abdomen. For the extremities, there was mild edema on lower legs but not on the dorsum of the feet. The muscle power was normal." Prof. Rao asked the audience if they had any questions. He went through the case again, adding information from the history and physical examination to see if the clinical manifestations matched with the history. He questioned why the patient was not using her accessory muscles when she was breathing at such a fast rate and reminded that the heart examination should not only consist of murmurs. From the fact that the patient had a long history of hypertension and was breathing rapidly, Prof. Rao thought that she might have accentuation of the second heart sound. He found it interesting that there were no other abnormal physical findings when the patient was dyspneic and asked about the patient's capillary refill time but Ivan had not performed the test.[1] He refuted that the latter should not just observe the extremities for edema.

[1] The capillary refill time is a measure of the adequacy of blood volume or peripheral circulation in a person. It is

Ivan continued his report about the patient's X-ray at the local hospital which revealed the presence of left pleural effusion, upon which Prof. Rao bemoaned that it should have been discovered in the physical examination and not from radiological images. He told the students that during their time, they could detect the presence of three hundred milliliters of pleural effusion and tap it without using any equipment such as X-rays. Someone chuckled in disbelief as it was contrary to the current practice of ultrasound-guided pleural tappings and moreover, it was hard for the students to imagine that one could discover that small amount of fluid in the chest cavity through percussion only. Ivan added that a small catheter had been inserted to release the chest fluid at the other hospital and Prof. Rao thought it was interesting that the patient should have rales in the region where her chest problem was. He tried to guide the students to think about changes in the lung physiology that caused the patient to be short of breath initially and how the symptoms would be relieved upon release of the pleural fluid. Next, he asked for the analysis of the pleural fluid and when Ivan began with the cytology result, Prof. Rao reminded that he should report about its characteristics first, for example its color, chemical composition e.g. protein and lactate dehydrogenase, white blood cell count, etc. Without waiting for Ivan to answer, he asked what abnormal cells were found. Ivan replied that it was adenocarcinoma and Prof. Rao wondered where the origin of the cancer could be, since the cell

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performed by holding the patient's hand higher than heart-level and pressing the soft pad of a finger or fingernail until it turns white. The pressure is then released and the time for the color to return is noted.

type could be found in many organs. He cautioned the students to be aware that even though the physical examination was normal, they should not draw any premature conclusions and assume that it originated from the lungs. He also questioned why the patient should have fever. On this familiar topic, a student answered "Infection" and Prof. Rao further inquired about the patient's white blood cell count and possible sites of infection. Other students supplied various answers such as the urinary tract and lungs, and with each Prof. Rao reasoned out loud the probable causes, asked how to prove or disprove them, and what antibiotics should be given to the patient. He engaged in a debate with Ivan about each possibility without providing a clear answer at the end, emphasizing that he wanted the students to think for themselves. Prof. Rao complained that physicians in Taiwan prescribe too many unnecessary tests but emphasized to the students that he was not opposed to them, only that physicians should think carefully before ordering. It was almost eight o'clock so Prof. Rao asked to see the patient.

Part 2: Bedside examination

Ivan went ahead to obtain the patient's permission for the bedside teaching while Prof. Rao washed his hands outside. The patient was wearing an oxygen cannula and eating her breakfast accompanied by her middle-age daughter. Prof. Rao thanked the patient in Taiwanese for letting the group see her. He adjusted the position of the tubing and inquired about her symptoms. He

noticed that the patient's hands were deformed, especially the fingers at the most distal joint, and remarked that she must have worked very hard in the past. The patient conceded that she had to wash a lot of clothes when she was younger because she had many children. Her daughter added in Mandarin that they did not have a washing machine then so the laundry had to be done by hand. Prof. Rao nodded in agreement and referring to the students, commented that contemporary young people had no idea how industrious people were in the past. Speaking in both Mandarin and English to the students, he wondered if there was ulnar deviation, a characteristic of DJD (degenerative joint disease). He then proceeded to examine the patient from head to toe while asking questions about her current condition. He examined the thyroid, felt for lymph nodes in the neck, and listened to the patient's breath sounds on her back. He told Ivan to listen and Dr. Ray, the junior resident, also placed his stethoscope on the patient's back. Prof. Rao asked the patient to say "Eee" whereupon Dr. Ray remarked "Left", denoting the side of the egophony. Then Prof. Rao listened to the patient's heart. He lowered the top part of the bed to an angle of forty-five degrees while inquiring if the patient was uncomfortable lying back. He told the students to observe the patient's jugular veins for engorgement before he lowered the bed further to thirty degrees. He indicated to Ivan to place his stethoscope on the mitral valve area while explaining to the patient that the young people had better ears than him. Ivan did not hear anything but Dr. Ray said there was a murmur. Prof. Rao added that it was rather loud. He

placed the chestpiece of his stethoscope on the area to let other students listen to it. The patient started wheezing and Prof. Rao asked if it happened only then or if she had experienced wheezing while she was at home. Then Prof. Rao apologized to the patient that he had to examine her abdomen and asked if it was painful to her while he felt the different areas. He requested the patient to breathe in deeply while he examined the left upper quadrant and remarked to the students in Mandarin that the spleen was palpable. When Prof. Rao checked the patient's legs, he saw that the knees were both swollen, with the left more than the right. The patient told him that she could not "exert strength" while walking. Prof. Rao asked the group in both Mandarin and English if there was rotation at the knees and if the axis had deviated. He pressed the popliteal area at the back of the knee and asked the patient if it was painful. She replied in negative and Prof. Rao remarked to the students that the knee cap was deformed. He joked with the patient that she must have been busy climbing up and down the stairs of her house. He then checked the capillary refilling of her nail bed and asked about the amount of oxygen flow the patient was given. Dr. Ray answered that it was three liters and added that yesterday when they removed the cannula, the patient's oxygen saturation was only 87 percent (normal: 95 percent or above) so they continued to give her oxygen. Prof. Rao noticed that the patient's face was rather flushed and asked if it was a recent phenomenon, at which the patient's daughter answered "No". He thanked the patient twice before leaving the room.

Part 3: Discussion

After the team had returned to the conference room, Prof. Rao went through the case with fresh information from the bedside, starting from the patient's appearance by noting that she was not cyanotic and that she was wearing an oxygen cannula. Proceeding to the chest, he questioned if the patient's trachea was at the midline but no one had observed that. He continued with the breath sounds, noting the presence of rales that Ivan mentioned but also the presence of bronchial sounds instead of normal alveolar sounds at the back which indicated that the expansion of the air sacs was not good. He asked about various other related details, for example, if the sounds appeared suddenly while listening from the top to the bottom of the lung field, if they coincided with the patient's inspiration and where the egophony appeared. For most questions, Prof. Rao did not provide the answers but wanted the students to listen by themselves more carefully later on. However, he explained the mechanism behind the cause of egophony and stressed again that with auscultation and percussion, one should be able to determine the level of chest fluid without having to rely on X-rays or ultrasound. Then Prof. Rao inquired about the position of the catheter drain and asked the students about the normal position of the diaphragm and how much fluid one should remove from the chest. He remarked that the patient's heart murmur was very loud but made an excuse for Ivan's contradictory report of it by saying that the sound might have been masked when the patient was admitted. Next, he mentioned about finding something on the left

side of the patient's abdomen but he was not sure since she was rather plump and he did not press too hard out of concern for her discomfort, so he wanted the students to examine it better later. Prof. Rao then listed the findings of degenerative joint disease found on the patient's hands and quizzed them about the name of the swellings on the end joints of the fingers (Herberden's nodes), saying that it would be tested in examinations. Continuing to the patient's legs, he recalled that the patient's left knee was more swollen than her right and commented that it must be painful for her to walk and that it would affect her gait. He stated that the patient's peripheral pulse was good and asked about her hematocrit (i.e. volume percentage of red blood cells in the blood). Ivan did not know and Prof. Rao reproved him that even though the patient's chief complaint was breathlessness, he should cultivate the habit of taking care of the whole patient. Ivan looked up the information from the computer and other data such as the mean corpuscular volume (MCV) and the red blood cell distribution width (RDW). Again, Prof. Rao asked what those tests meant and if the patient's results were acceptable for someone her age without giving the answers. He went on to analyze the patient's chest X-ray which we shall see in detail later. He asked Dr. Ray to read the image and the latter did a very good job. Prof. Rao praised Dr. Ray before he turned to the clerks. He asked if the students had been scared off by his questioning but quickly reassured them that they had already learned all the things he had mentioned, though they had to translate their basic scientific knowledge to the clinical situation. He also encouraged

them to have an objective attitude. Referring to the students' love for classes proper, Prof. Rao listed all the topics that could be given about the case but reminded them that they would just be sleeping or doing something else in class. Again, he emphasized the importance of learning clinically and said that what he had just done was to demonstrate how to go about it. Finally, he gave some advice and encouragement to the students and ended on time at half past eight.

Teaching How to Be Medical Detectives

Professor Rao's teaching is considered to be one of the best by those young attendings who received their residency training at SOTH. He is very knowledgeable and expert in conducting physical examinations. His manner is friendly and non-threatening to the younger generation. In the above which was the first special teaching that particular group had, Prof. Rao wanted the students to think of various possibilities for the patient's symptoms, physical findings, radiological imaging, and laboratory data — i.e. the differential diagnoses — so he stopped Ivan's report at each section to ask questions. This method of systematic analysis is adopted by some teachers at SOTH, for example, Dr. Meng as we have seen. However, it is contrary to how physicians are traditionally educated and trained in Taiwan and consequently, most students are not used to Prof. Rao's teaching initially. This is not helped by Prof. Rao's habit of firing lots of questions without providing most of the answers, which often overwhelms the neophytes,

especially those who do not bother to follow and look up the clues he supplies but who expect the teacher to hand-feed them. Only the more industrious learners appreciate how Prof. Rao stimulate and challenge their thinking, and fortunately, SOTH has more of these.

In the above example, which was one of the best teachings by Prof. Rao during Professors Rounds that I had witnessed, we see that after Ivan reported about the patient's chief complaints and history of present illness, Prof. Rao first ascertained if the history was reliable before he summarized the patient's condition. Then he listed some possible causes for the patient's main problem, breathlessness, and ruled out those unlikely factors according to what Ivan had found out from her. He advised the latter to think more about what could be uncovered in the history instead of relying too much on diagnostic examinations. After Ivan gave a brief account of the patient's physical examination, Prof. Rao went through each item slowly, pointing out some of the discrepancies such as the fact that even though the patient was breathing at a rather fast rate of twenty-six breaths per minute (normal: twelve to twenty in adults), Ivan did not report other abnormalities, for example the use of accessory muscles for breathing or other signs of respiratory distress in the patient. Actually the patient had, as the group saw later at the bedside, the most noticeable being her need for oxygen supplementation. Prof. Rao repeatedly reminded Ivan to be more thorough in the physical examination, for example he should not check for edema only when examining the lower extremities. He also wanted the intern to link what he

already knew from the patient's history to the physical signs, such as to look for possible abnormalities in the heart due to chronic hypertension, e.g. displacement of the point of maximum impulse (PMI) or increased heart border. He wanted Ivan to consider other causes or possibilities in the patient's physical findings and diagnostic results, warned him not to jump to conclusions or else his thinking would revolve around his presupposition, and advised him to remain objective. Prof. Rao went through the physiological mechanisms of lung expansion to guide Ivan to think about the effect of fluid accumulation in the patient's left lung, why it made her dyspneic, and what happened when it was drained. He inquired about the characteristics of the pleural effusion, the likely sources of the type of cancer cell,[2] why the patient had fever, and how to manage the patient's problems. About the last point, it included details such as how much fluid to drain from the lung and what antibiotics to give.

A brief analysis of Prof. Rao's speech acts in the first part revealed that at the beginning, he would summarize the case more often, perhaps to remind the students of the poignant facts they have learned from Ivan's report. He repeatedly pointed out that the patient was an eighty-five-year-old woman, because one's age and gender influence the likelihood of certain ailments one gets. Prof. Rao would often fire a series of questions before he provided an explanation or made a comment. For the latter, Prof. Rao would use his own experience or examples, other people's

[2] Adenocarcinomas may arise from many different parts of the body besides the lungs, such as the gastrointestinal tract (e.g. the esophagus, stomach, and colon), breasts, and prostate gland.

stories, or his observations or thoughts. To lighten the subject, he often dressed up his remarks in the form of funny anecdotes.

In the second part of the round, when the group visited the patient, one could see how rough Ivan's physical examination had been. He had missed performing certain exams, including egophony and capillary filling time, did not notice certain abnormalities, for example the heart murmur or enlarged spleen, and had not observed or recorded findings that were unrelated to the patient's main problems, such as deformed finger joints and swollen knees. This highlights a very serious problem in the present clinical training of medical students in Taiwan, which was perhaps why Prof. Rao commented about it frequently.[3] Although Prof. Rao excused Ivan's inability to discern the heart murmur and enlarged spleen later during the final discussion by saying that the murmur might have been masked when the patient was first admitted and that it was difficult to examine the abdomen because the patient was plump, it is worrying that aberrations in these key items in a physical exam have been missed. In contrast, readers could see how much details the senior physician gathered from his bedside visit. One could argue that the latter had much more clinical experiences and skills, but those tests that Prof. Rao mentioned that Ivan missed are part of the basic physical examination. Moreover, the senior physician also paid attention to the patient's past occupation and lifestyle.

[3] The problem is also prevalent elsewhere, e.g. Arney (1982) noted that physicians focus too much on technology, while Hahn (1985) appealed to doctors to "treat the patient, not the lab".

During the last part of the round, Prof. Rao went over the case in detail after seeing the patient. Again, he reminded the students of the patient's age and gender. He recounted his observations starting from the general appearance of the patient and the head, before describing specific physical findings of the lungs, heart, abdomen, and joints. He tried to persuade his disciples that it was possible to discover many things by careful examination including observation, auscultation, and percussion, and to think about the findings, for example the fact that the patient's gait would be affected by the swelling in her knees that affected one side more than the other. When Ivan did not have a laboratory data at hand, Prof. Rao reminded the intern to see the patient holistically and not just focus on her complaint. Next, he discussed the patient's chest X-ray as follows:

> So tell me, is this a PA (posterior-anterior [view]) or AP (anterior-posterior) film? (Ivan: PA) How do you know it's PA? (he shows an AP view) What's the difference? Clavicle position, scapular position… will tell you that's PA. If you're a forensic radiologist, you can tell the weight and height from the X-rays. There are many systems that you can use to read the chest X-ray. First thing: Was it well taken? Then we see from the trachea position: is it in the exact center? Is there tilting of the carina bifurcation? Then count each of the ribs to see if any is broken. Some people have thirteen ribs. What's that denting in the left thoracic cage? See from afar, here. If you don't know, you can ask the radiologists. What do you see in the lungs? The right costal-phrenic angle is good, so the right side expansion is okay. From the intercostal spaces, we can tell how much the lung volume is. Then you compare to the right, what's different with the left? There are some white spots in the left. Is there blunting of the costal-phrenic angle? It's because of the pigtail (drainage tube) which we can see. Is the re-expansion good? … Where's the cardiac border? She has a history of hypertension; is the aortic knob normal? Does she have aortic calcification when she's eighty-five years old? Are

there changes in her ventricular sizes? Because she has hypertension. What medications is she on?

We see that Prof. Rao first listed the items to ascertain at the beginning of a chest X-ray reading. He might have wanted just to demonstrate to the students how to translate their knowledge of basic sciences into actual practice, as his remark at the end noted that it was their first few days in internal medicine. Then Prof. Rao went about the actual reading in a systematic fashion before taking into consideration the changes to the cardiovascular system the patient might suffer from as a result of her chronic hypertension. He asked a lot of questions without answering most of them. Prof. Rao's habit of firing questions to the students without waiting for their responses or expecting their replies risk turning the students' attention off. We noted how initially Ivan still attempted to answer him but later gave up. However, because it was a special round and Prof. Rao a senior physician, most students would still pay attention to him. In fact, many of them listed Prof. Rao as one of the best teachers they had. When I asked Prof. Rao why he just asked questions, he replied that he wanted to make the students think. He told the students at the end of his round that day that they could have held many classes based on that particular patient, such as degenerative joint diseases, differential diagnoses of pleural effusions, breathlessness, and lung physiology, but he believed that the students would just fall asleep in class, so he urged them, "That's how you learn clinically. You won't be so nervous. It's more active. Go see the patient

well, establish good doctor-patient relationship. He will tell you a lot of things. Was I too harsh with you? Will you think of leaving the profession? No, it's still fun."

Prof. Rao's skills in conducting physical examinations never fail to amaze and impress students. I enjoy his favorite story about what one can find out from shaking hands with a patient. He often referred to this during his discussion on physical examination and he would remind the students that the examination began the moment the patient stepped into the consultation room, starting from noticing how the patient walked. Then, when one shook hands with the patient, one could observe if the patient was able to extend his hand and if the hand was steady or shaky; the latter might indicate hyperthyroidism or alcoholism. On contact, one should feel if the grip was strong, if the hand was warm, or if it sweated excessively. The first situation might tell one whether the patient had problems with the muscular system and the second about the peripheral circulation. Furthermore, one could observe whether the patient was suffering from arthritis and other joint problems. Prof. Rao also liked to refer to the local traditional belief that a person with "muscular" hands, i.e. has thick palms, is rich and he often advised his young protégés that the first thing they should do when they had a boy- or girlfriend was to shake hands with him or her to find out if the person "has good fortune". This counsel always drew laughter from his audience. Once Prof. Rao revealed the source of his handshake test to a group of students: he had a teacher from Vienna who once quizzed them during an oral exam for at least ten differential

diagnoses from a handshake. Later when I talked to him after the Professors Rounds, Prof. Rao told me that he learned a lot from those doctors who arrived from Europe when he was training at a medical center in the U.S. during the late 1960s. He shared with me that the Austrian doctor was a cardiologist who taught them the importance of shaking hands with their patients to gain their trust and mentioned another physician who was very observant and whose medical records were "classic" because they contained a lot of detailed descriptions of the patients. As a result, he had been trained to see the "big picture"[4] (i.e. the whole patient), for example when reading a chest X-ray, he would also try to ascertain the gender, height, and weight of the person and other information.

Example by Professor Nian

Part 1: Case report

The following round was held by a neurologist in his mid-sixties at the end of the second month of rotation in internal medicine for the last batch of REMS clerks that year. There were no interns that month and the two teams in internal medicine had their Professors Rounds together that day as the other teachers were on leave. Carl introduced the case, which was about a sixty-three-year-old man with low back pain that radiated down the left foot, who was seen and

[4] Spencer and Jordan (1999) noted that one of the differences between a novice and an expert is the ability to see the big picture.

operated on at another hospital eight months previously without relief. The patient had fever two months ago that was caused by an urinary tract infection but it was subsequently linked to a tumor in the spine that had grown into the pelvic cavity and he had come to SOTH for more detailed examination and management. Prof. Nian allowed Carl to present the complete case with only some interruptions to clarify certain points and at the end asked the student why he had brought up the case. Carl replied that he had problems with performing neurological tests on the patient, especially the sensory system because the latter was not very responsive. He further explained that the patient's short-term memory had deteriorated so badly that when he asked the patient about what he had said, the latter would reply, "Did I say that?" Earlier in his report, Carl had mentioned that the patient was originally from China and came to Taiwan as a child after his father passed away.

Prof. Nian outlined to the students that he wanted to do a mini-lecture first before seeing the patient. He asked them to list physical examinations for low back pain, the patient's initial complaint. All the students took turns to give their answers and at the end Prof. Nian explained that low back pain was a common problem in the out-patient clinic, which was why he wanted to discuss it. He drew a cross-section of a vertebra on the board and pointed out its basic features. He told the students that the paraspinal muscles made up the T-bone steak and if there were problems with them, it meant that the lesion was at the root level. Next he went through very

quickly the peripheral nerves that control the various deep tendon reflexes and taught the students the order in which to memorize them. Finally, he demonstrated how to examine a patient with low back pain using Chris as a model. Prof. Nian finished his mini-lecture within eight minutes and then went over those questionable points in the patient's history, particularly why the patient was given a spinal operation for his low back pain at the previous hospital. He cautioned the students about being over-reliant on diagnostic examinations and jumping into conclusions about a patient's condition. Prof. Nian was also quick to warn the students not to criticize other doctors, especially when they are at large medical institutions and receive patients who had been referred from primary or secondary health care facilities, but to be considerate about the circumstances others might be working under. He gave his own example in the States where his students would often laugh at the referring doctors for not diagnosing the patients' conditions. Prof. Nian would stop them by explaining that the patients' presentations might had been different when they were seen by the other physicians and that the students might not had been able to tell what the problem was at that time either. Instead of talking negatively about others, Prof. Nian advised the students to think actively about what they could learn from each patient and what else could be done and he wanted them to apply those principles to the patient immediately. With that, he ended the case report and preliminary discussion.

Part 2: Bedside examination

At eight o'clock, the entire group went to see the patient. Prof. Nian spoke to the patient in Mandarin and ascertained the areas where the latter was experiencing pain. He then asked, "Do you mind if I see you slowly and explain to the students?" When the patient said it was okay, the doctor replied, "Good. Tell me if you become tired." He told the students that the distribution of the patient's distress was typical of that of the S1 and S2 spinal roots and took out a booklet from his black bag to illustrate.[5] Then Prof. Nian asked the patient more questions about the discomfort, such as its strength and if there were radiation when he coughs or sneezes. He asked the patient to cough rather hard but the latter reported no radiation of pain. He explained to the students that if there were, it would be a disc problem. Next Prof. Nian informed the patient that he was going to examine him and once again reminded the latter to tell him if he was tired. The senior physician got the patient to lie flat on his back before he performed the straight leg raising test. He highlighted to the students those key points in conducting the examination properly before proceeding to check the deep tendon reflexes of the left knee and ankle and then those on the right, while asking the patient about his diabetes at the same time. There was no knee jerk and after trying again unsuccessfully, Prof. Nian asked the patient to hold his hands together and pull when he counted to three. He demonstrated what he wanted the patient to do before asking

[5] It was *Aids to the examination of the peripheral nervous system* (Tindall 1986).

the latter to perform the action while he knocked on the knee at the third count. He told the student the action was to enhance the reflex but still, he could not elicit any. The patient revealed that he had injured his knees while riding. When Prof. Nian was checking the patient's arms for deep tendon reflexes, the latter began to complain about discomfort and frowned. The physician stopped to ask the patient about it and his chronic ailments but after a while, the latter made some crying sounds and retching noises during the conversation. Upon questioning, the patient explained that he had not slept well the previous night because of the pain. Prof. Nian turned the subject to the patient's family and his concerns about his illness and the patient answered that his children were all grown with good education so he had nothing to worry about but he remarked twice that he hoped that he could "leave" (i.e. die) in a good manner. The doctor commented about it when the patient first expressed his wish but on the second time, he asked the patient some questions about himself. After a while, Prof. Nian took out some instruments from his bag and told the patient that he had heard that the latter was not well on his left side, so he would like to examine the problem.

Prof. Nian asked the patient more about the location and nature of his discomfort and then proceeded to examine the sensory system. He first pricked the patient's both hands and cheeks and asked the latter if he felt anything. The patient protested that he was not prepared for the examination but Prof. Nian assured him that he did not need to. He continued with tests for

perception of coldness and vibration by using a tuning fork. The patient did not have sensations on his left foot. Then Prof. Nian asked about the muscle strengths in the patient's extremities, to which the latter replied that he was completely weak on his left side. He ascertained that the patient was right-handed and told the latter to raise his arms. The patient was able to do so, though with a slight tremor. The doctor next tested the muscle powers of both hands, legs, and feet against resistance while asking the patient questions. The patient was not able to apply pressure on his left foot. Prof. Nian felt the patient's calves and told the students to do so too; the left was atrophied. He tried to find out if the patient had tingling sensations when he stood up after squatting in the toilet for a long time but the latter replied that he could neither squat nor stand, so he had to use a sitting toilet. He then inquired about the patient's previous spinal surgery and discovered that the patient had two operations for his back problem, but the second was unsuccessful. Prof. Nian remarked that the patient sounded quite uncomfortable, at which the latter complained that there was nothing he could do about it: he felt like a person could not speak. The patient lamented that his children did not care for him and bemoaned that he could not smoke in the hospital. When Prof. Nian found out that the patient had only stopped smoking a few months ago, he patted the patient's hand and consoled that one's mood would naturally be bad when one quit smoking or drinking. The patient replied that those "without diplomas" find solace in such activities but the senior physician commented that he sounded quite educated.

After some exchanges, the patient turned away. Prof. Nian asked the patient if he were more comfortable lying on that side and told the latter that he would move over to face him. He told the patient that he was worried about the patient's poor short-term memory and the latter replied that further tests would not be of use to him. Prof. Nian tried to persuade the patient that the hospital staff might be able to help him but the latter was adamant that he did not require anything. Prof. Nian told the students to observe the patient's face and tried to cheer the patient up and give him some hope. He told the patient that he was very happy to see him, shook hands, and thanked the latter.

Part 3: Discussion

It was two minutes before half past eight when Prof. Nian commenced the discussion. He remarked that it was a rather difficult patient. Prof. Nian asked the students why he wanted them to look at the patient's face at the end. Carl said it was tense but Carol noted that it was a bit asymmetrical. Prof. Nian agreed that the nasolabial fold was shallow on the right but very deep on the left and asked if there was facial weakness. Carl suggested that they could test by asking the patient to laugh but Prof. Nian thought that the patient was not in the mood to do so though one could check for peripheral facial neuropathy by observing if the eye on the other side is bigger due to the action by the orbicularis oculi muscles. However, it was not present in the

patient, so it might just be normal facial asymmetry. Prof. Nian then reminded the students that even though the patient was severely depressed, he could still have neurological problems. He wanted them to list the positive signs they had seen. Carol, Cynthia, and Carrie provided some answers and Prof. Nian went through them briefly. A student mixed up what Prof. Nian had taught them about the spinal roots that control the deep tendon reflexes with the areas of distribution of the sensory roots, so the senior clinician clarified again. Carl asked why Prof. Nian often performed the sensory tests twice and why the patient sometimes felt the sensation and sometimes not. Prof. Nian, in turn, asked the group what they had noticed when he was doing the test on vibrational sensation. Carol replied that sometimes Prof. Nian did not vibrate the tuning fork. The senior physician laughed and explained that he had developed the method to test if a patient was telling the truth and if he or she were mentally alert. He demonstrated how to do it on Carl and said that most people would not notice that he had stopped the vibrations with his hand before placing the tuning fork on the patient.

The discussion turned to the motor system when Carrie mentioned about the atrophy of the left gastrocnemius muscle and Prof. Nian thought that it was a very important objective sign that the patient had some neurological problems. He asked Claire what she had seen and the latter replied about the weakness in the left foot. Prof. Nian noticed that Chris had not spoken and asked for his observation. The latter replied that all had been said but with Prof. Nian's

prompting, cited that the patient looked depressed. The physician added that the patient would not have eye contact with anyone during conversation and noted some of the possible reasons for his condition, namely, his children's aloofness and his poor education. Prof. Nian told the students that he could not put the patient at ease because there were so many of them but he had badly wanted to perform the naming test on the patient if he had more time. He demonstrated how it was done by taking out a pen and placing his glasses and watch on the table before putting them away. Carl said that the patient remembered things he had placed himself. Prof. Nian returned to the subject of depression and shared with the students that he found it better to inform the patient before they consult a psychiatrist so that the patient would be more receptive about seeing one, although he thought that it would be difficult in the patient's situation. Carl added that the patient's dream of bringing his children back to his hometown in China had been broken by his illness. Prof. Nian concluded that he did not teach much that day because the patient was uncooperative but he reminded the students what he had taught them about evaluation of low back pain. He summarized the case and shared with the students that he would repeatedly tell patients that they could call a stop if they did not want to continue the examinations, but because of his continual reminders, the patients would often let him finish. Before he left at a quarter to nine, Prof Nian told Carl to continue communicating with the patient about accepting psychiatric assistance.

Using Fixed Curriculum Scripts with Improvisation

We have seen how both experienced clinicians conducted their special rounds in basically the same manner: first, case report by a student with clarifications, followed by a bedside visit where the patient is interviewed and examined, and finally, a discussion. Like Prof. Rao, Professor Nian had trained and worked in the United States, so there were many similarities in their methods of teaching, particularly a systematic approach to patients. Prof. Nian would normally stop at each section to ask questions and list the differential diagnoses but because the students were nearing the end of their internal medicine rotation and their first year of clerkship, he allowed Carl to present the case in its entirety that day. After finding out from Carl what the latter wanted to focus on, Prof. Nian decided how he would hold the Professors Rounds that day.[6] As in Mattern, Weinholtz, and Friedman's (1983) findings, Prof. Nian used successful strategies in case presentations such as careful listening, limited questioning, use of clarifying rather than probing questions, use of the student's presentation and impression as springboard for subsequent case discussion and analysis. He went through the anatomy of the spine with the students first, to refresh their memories on their basic science knowledge, and what the students had learnt about physical examinations for low back pain. He highlighted the discrepancies in the

[6] This exemplifies the improvisation or interactive thinking a teacher undergoes during teaching whereby he or she continuously monitor, think about, and make decisions related to interaction with students, the task dimensions of teaching (goals, methods, learners), and the content (Clark and Peterson 1986; Yinger 1986; Borko and Livingston 1989; Sabers, Cushing, and Berliner 1991; Irby 1992; R. Schulman, Wilkerson, and Goldman 1992).

history that needed to be clarified with the patient later on. At the bedside, even though the patient was not cooperative, Prof. Nian managed to assess the patient's condition, test his deep tendon reflexes and sensations, and even carried out a mini-teaching on the distribution of the sensory roots. Like Prof. Rao, Prof. Nian also discovered that day physical findings that the student had not reported, specifically, the wasting of the left calf muscle and the asymmetry of the patient's face at the nasolabial folds. He also spoke to the patient in his mother tongue and paid attention to the latter's needs and state of mind. Yet, unlike his colleague, Prof. Nian did not just throw out a lot of questions. He would get the students to reply in turn the main questions before supplying his answers. He paid more attention to how to carry out physical and neurological examinations through demonstration. Even though he was also in the opinion that physicians nowadays rely too much on diagnostic tests, he did not criticize others but rather, he advised the students to be positive, learn from each situation, and think about what they can do for their patients. Moreover, Prof. Nian would share with his disciples his own experiences and provide plenty of very helpful tips, such as which tests to use, how to better elicit a reaction, how to avoid false reporting, and as we saw in this case, how to make the patient consent to being examined by constantly inquiring about his condition and telling him that he could stop the inspection at any time.

For most medical students, neurology is a very difficult subject as there are many details to memorize and some of the facts can be rather confusing, for example, the mix up between the distributions of the sensory and motor roots by one student here. Yet Prof. Nian made the subject matter of discussion seem simple. In my opinion, Prof. Nian has a more difficult teaching duty because of various reasons. Firstly, like the patient presented here, many neurology patients also suffer from depression or are relatively uncooperative. Secondly, it is often quite difficult to determine the true cause of the patients' conditions, as in the case of a woman with seizure once: even after Prof. Nian's careful examination, he was still unable to ascertain if it were truly epilepsy. Last but not least, the students do not always have neurological cases for the special teaching. Once a team reported beforehand that there was no case for discussion, so Prof. Nian talked about a patient that he had seen at his out-patient clinic the previous day. Even though Prof. Nian did a fairly good job to describe the case and had rather in-depth discussion with the students, some still found it lacking that it was not a patient that they knew or had seen. Because his was a specialized field, Prof. Nian had a "pocket list" of topics for discussion with the students and so each time during the Professors Rounds, he would focus on the one or two subjects that the patient being discussed fall under. His "pocket list" is equivalent of what some scholars term "curriculum script" (e.g. Yinger 1986; Putnam 1987), and like Irby's (1992) study subjects, he would vary the fixed script with improvisation using Socratic style of interchange.

Some of the topics include: headache, stroke, dizziness, seizures, degenerative diseases, coma, examination of the cranial nerves, and evaluation of patients with muscle weakness. Like Prof. Rao, Prof. Nian is also reputed to be one of the best teachers at SOTH by past students, some of whom have become attending physicians themselves. Students appreciate Prof. Nian's methodological and systematic way of approaching patients from their symptoms or chief complaints and not disease entities, and his very useful summaries of neurological examinations and tips. I believe these are the results of his years of experience in patient care and teaching. Furthermore, besides the clinical, Prof. Nian will also bring the students' attention to the patients' psychological and social aspects, as in the case above whereby the cause of the patient's depression was determined to be not only due to physical suffering but also personal and familiar problems. In addition, Prof. Nian's sense of humor also endears him to the students, as seen that day when he discovered that Chris had not yet offered his answer after all his classmates had taken their turn, he laughingly quoted a Taiwanese proverb, "The good wine sinks to the bottom of the barrel" (the best comes last) and explained to the students its meaning before he asked the latter to reply.

Prof. Nian is constantly seeking ways to improve his pedagogical methodology and thus, he is interested in what the students think about his teaching. He was the only teacher who would ask me about the students' feedback to his special rounds. Once after attending a conference on

medical education, he shared with his disciples what he had learned about how to deal with students using smart phones or tablet computers in class. He agreed with the presenter that instead of banning students from surfing the internet and not paying attention to the class,[7] teachers could encourage students to be more engaged with the topic by getting them to look up certain information. Prof. Nian immediately practiced what he preached by instructing his disciples to search for a particular terminology online and again while he was discussing a rare neurological disorder as part of the differential diagnoses of the patient's condition later.

Conclusion

In this chapter, we saw two senior expert physicians at work in how they collected clinical information, performed physical examinations, and dealt with complicated cases and uncooperative patients. Mattern, Weinholtz, and Friedman (1983) believed that good clinician-teachers can maintain the focus of discussion, clarify important clinical issues, elicit thoughts of other members, use the discussion to cross-check issues relevant to clinical problem solving (e.g. physical findings, symptoms, differential diagnosis) during case conferences, and that bedside teaching is valuable when they are conducted with definite purposes, such as to illustrate or confirm certain physical findings, validate and expand key points in the history, and demonstrate

[7] Indeed, I often see various members of the team, such as interns, residents, and nurse practitioners, looking at their cellular phones during case presentations and discussions.

appropriate methods of interacting with patients, for example non-cognitive, attitudinal, and communicative skills. The expertise and skills the two professors exhibited at the bedside demonstrate clearly what it is like for an amateur versus a professional when they are seeing a patient or watching a performance, as explained so pertinently by the quote at the beginning of this chapter: while lay persons are attracted to the superficial, lively activities that goes on the stage, experts may note and admire the various details that are in place to make the show possible. Therefore, people with different understanding and knowledge of a matter will look at the same object or activity from various perspectives and depths.

Chapter Six: Some "Classic" Teachings

台上一分鐘，台下十年功
One minute on stage, ten years of practice off-stage
– Chinese proverb

In this chapter, I shall investigate the methods and techniques of instruction by a physician whose teachings were considered "classic" by the students. Dr. Song is a surgeon in his early fifties who is well-versed in the Chinese classics and often quotes historical phrases, poems, and sayings in his conversations. Originally, I had not planned to study the surgical department but did so after some students highly recommended me to check out Dr. Song's teaching. I shall describe several of his examples of teaching in different settings.

Two Classes

I shall first describe two classes Dr. Song gave one afternoon in succession about chronic wounds and suturing, both of which took approximately half an hour each. These two classes, one theoretical and the other practical, highlight some of the key features of his teachings.

Dr. Song began the class on chronic wounds by asking the students if they had experience changing dressings for patients. One of the men replied in affirmative and Dr. Song asked him

what he did and the rationale behind each step, such as the purposes of using povidone-iodine and alcohol, and covering the wound with gauze. He then introduced the topic of his class that day and asked another student the types of wounds they had seen other than surgical ones. The students provided various answers and with each, Dr. Song asked further questions about the characteristics of the wounds, such as their appearances, size, and depth. When a student mentioned that he saw another surgeon open an infected wound at the out-patient clinic the previous day, Dr. Song questioned him how the surgeon managed it and the reason for it, and he praised the student for providing the right answers. Dr. Song next outlined what the students had to know from the class (i.e. the learning objectives), which included: (1) descriptions of wounds, (2) local and systemic factors that affect healing, and (3) the eight types of wound dressings.

Dr. Song then went through the various factors that affect healing, such as whether a wound was acute or chronic, its cause (e.g. bed sore, abrasion, electroshock, chemical burn, radiation, diabetes), size, depth, shape, location, and whether there was a side track or tunnel. He asked two students to repeat the points without looking at their notes. Next he elaborated on the description of wounds, for example the color, content, edges, odor, and surrounding. He alerted the students about certain situations where the wound could not be sutured immediately and after that, he got a student to reiterate the points. Dr. Song then proceeded to talk about the contents of wounds and he wrote on the board those items that had been mentioned already. He asked the audience

for others and when someone answered “Foreign body”, he replied “Very good! So clever!” He grouped the items into solids, fluids, and gases, and asked the class if he had taught them the five descriptions for drainage fluids. As before, the students provided various answers and Dr. Song continued to elaborate about the contents of wounds. He briefly summarized what had been discussed before proceeding about other descriptions of wounds. At the end, he reviewed the main points and after that, deliberated about systemic and local healing factors. He asked each student in turn about what he had taught them at the out-patient clinic about infection, a common complication of surgeries, and his disciples responded well. In that manner, Dr. Song covered the topic and he told the students that once they knew about the factors that affected healing, they could think about how to assist the mending process.

Finally, Dr. Song talked about the eight types of wound dressings. He drew a four by four matrix on the board and wrote the words “direct” and “indirect” horizontally above it and “dry” and “wet” on the left. He asked the students how they defined direct and indirect dressings and reminded them that they should have learned it in their basic surgery class before. He asked them the reasons for having direct and indirect dressings and the name of the process for removing dead tissues. The answer was “debridement” and Dr. Song taught them the correct pronunciation of the word and those of “debride” and “debris” which are commonly mispronounced in Taiwan. Then Dr. Song told the students to remember a phrase in Mandarin which represented the

essence of wound management and the key idea of the class. The phrase, "to remove dead tissues and promote granulation",[1] is a concept in traditional Chinese medicine and Dr. Song shared with the class that patients loved it when he taught them the principle. He explained that the last word referred to live tissues like granulation and epithelial tissues, but the problem was to differentiate between dead and live ones. He wanted the students to think when they would use direct or indirect dressings, and dry or wet ones, and gave reasons for each of them. He introduced the four types of commercial dressings available and their uses, discussed the ratio of iodine solution for wet dressings, and other subjects. As usual, Dr. Song concluded the class with a summary and asked if the students had any questions. They did not, so he proceeded with the class on introduction to suturing.

The students all had a box containing surgical instruments with them and Dr. Song first taught them how to use a needle holder. As the students already had some practice at school on suturing, they were familiar with the instrument. Dr. Song asked them for reasons why the needle holder was held in a particular manner with the forefinger stretched on the blade and the other three fingers around the handle and not through the finger hole. He told the students to open the needle holder and checked how each student performed the action. He advised them to practice the action well because it would determine the time of an operation since one needed to open and

[1] The phrase 去腐生肌 literally means "to remove rotten tissues and grow muscles".

close a needle holder four times to make a stitch. He encouraged them by citing the example of their senior who wished to go into ob/gyn: she had the instrument in her coat pocket and practiced all the time. Dr. Song explained that he knew about it because he would hear the noise "clack-clack" all the time when she was near him. Dr. Song then had the students place a suture needle on the holder. He explained in detail how to do it, checked each student and corrected them individually. He had them practice doing it five times before he demonstrated how to hold the forceps with his left hand. Dr. Song passed out pieces of gauze for the students to practice how to insert the needle. He taught the students a formula to memorize for the process which consisted of "five ninety-degrees and two arcs": the ninety degrees indicated the angle at which to position oneself, hold, insert and push the needle, and grasp the needle upon exit, while the arcs referred to how the hands should move when inserting and removing the needle. Dr. Song also introduced other tips and checked the students' actions. He told them that they needed to practice well before proceeding to teach them how to tie a suture. He first demonstrated how to insert a suture into the needle before performing a stitch again. Then he demonstrated how to do a back stitch and shared with the students a couple of tricks on how to perform the actions easily and well. Finally, he showed them how to tie the suture but emphasized that the most important thing was to learn how to open and close the needle holder well. At the end, a student asked a question about suturing and after replying, Dr. Song stressed to his disciples that surgeons should

be skillful as well as knowledgeable. Dr. Song later told me that he used to teach suturing individually but was requested by Shirley to give the class to all students doing their surgical rotation. However he believed that those students who did not use it immediately would forget what they had learned.

Recall, Repetition, Relating, Reorganization

I have summarized the contents of Dr. Song's teaching and the techniques he used in the first class on chronic wounds in Table 6. Dr. Song first used questions and answers to relate to the students' experiences, discover how much they know, remind that they had already learned it, and find out how much they had retained from their previous classes. After someone provided an answer, Dr. Song would follow up with further questions, for example when a student brought up "depth" as one of the characteristic of wounds, he asked what one would see if the different layers of the skin were injured. These stimulated the students to think more deeply. Furthermore, he would praise them when they provided good answers. Dr. Song used a lot of repetitions, summaries, examples, and reorganization of content to leave a deeper impression in the audience. He not only repeated the key points himself, he would get one or even two students to reiterate them without looking at their notes. This also ensured that the audience would not fall asleep in class. Early during class, he gave examples of how he had healed the chronic wounds of some

people, including the son of a physician. Unlike other physicians who like to talk about their past glories, Dr. Song did not sound boastful. In fact, he explained that the reason he provided the examples was to impress the students about the importance of the class and to motivate their learning.

Table 6: Analysis of Dr. Song's Class on Chronic Wounds

Topic	Contents	Techniques or Purposes
Introduction	Ask: experience in changing wounds, reasons to do each step Introduce topic: chronic wounds Ask: types of wounds & their descriptions Introduce contents of class Examples: how he healed chronic wounds	Relate to students' experiences Probe further to stimulate thinking Bring back focus to class Relate to students' experiences Introduce learning objectives Impress and motivate learning
Characteristics of wounds	Ask: descriptions of wounds Get student to repeat key points Group wound contents into 3 categories Review main points	Recall previous knowledge Repeat key points Reorganize information Summarize topic
Healing factors	Ask: factors that affect healing Quiz: what he taught them at OPD	Recall previous knowledge Inspect result of previous teaching
Types of wound dressings	Draw 4x4 matrix Ask: distinguish direct & indirect dressing Examples of direct & indirect dressings	Categorize information, visual aid Recall (and remind) knowledge Illustrate
Applications of dressings	Introduce principle of healing Ask: type of dressing for various situations Summarize	Introduce key point of class Application of knowledge Summarize content
Conclusion	Ask if students have questions	Elicit feedback

Dr. Song introduced the contents in a step-wise and logical manner and linked each section with the preceding one by telling his apprentices that by understanding the types of wounds and factors that affect healing, they would then know how to heal, and if they recognized the

principle of healing, then they could discern the types of dressings to use. In that manner, he gradually shifted the topic from basic knowledge to its application and from theory to practice. He distilled the essence of the class into a phrase borrowed from traditional Chinese medicine to facilitate retention of the subject and gave tips about practical care, such as the ratio for dilution of iodine solution for different purposes, and situations where the wound could not be sutured. I believe the students learned a lot from the class that day. Even for someone like me with clinical experience, the class was a very good revision. Later after my fieldwork when I worked part-time in home care and encountered many patients who were bedridden and had huge bedsores, I often thought of Dr. Song's class to guide me in managing their wounds.

As for the class on the basics of suturing, since it was about a technique, Dr. Song broke it down into basic steps. He first taught his disciples how to grasp a needle holder, how to open and close it, how to place a suture needle onto the holder, how to suture, and finally, how to tie the suture. For each step, he would explain in detail, demonstrate, give tips, get the students to practice a few times, and check on their actions. He emphasized the importance of practice and as usual, gave examples to encourage them. Then he augmented practice with theory, for example by asking about reasons why the needle holder was held in a particular manner, and taught the students a formula to memorize the steps in suturing.

From Dr. Song's examples of classroom teaching, I believe that it requires a certain depth of understanding of a subject, for example about the mechanisms of wound healing and appropriate types of dressings, and more importantly, effort and creativity to sort and organize the information into a number of key points or easy-to-remember phrases, such as the five ninety-degrees and two arcs. I noticed Dr. Song's use of numbers is similar to the practice in Buddhism, for example the Three Jewels, Four Noble Truths, Five Precepts, and Noble Eightfold Paths, to name a few. Years ago, I was told by a meditation teacher that the method is very common in oral traditions to help people recall things. In addition, Dr. Song would remember the good deeds of his students and share them with others. For the class on surgical technique, he could break down the actions into minute steps. Furthermore, he would notice and share tricks for doing certain steps easily or well. He allowed the students to practice and checked if they did the actions correctly. All these require patience and attention to details. We shall next see how Dr. Song taught the students at his out-patient clinic.

Teaching at an Out-Patient Clinic

The following was observed on a Monday, the middle of the month, during a period of time when SOTH had clerks from both REMS and PEMS. Dr. Song had a clinic in reconstructive surgery which consisted mainly of cases with skin lesions that required excision. With him that

morning were Dr. Roy, a first year surgical resident, Chris, a REMS clerk who had been in surgery since the beginning of the month, and Cecil, a clerk from PEMS who was new. The team arrived at the clinic at nine o'clock after the morning meeting and ward rounds. Dr. Song had patients in adjacent rooms and he would go back and forth the two consultation rooms.

The first patient had already seen Dr. Song before and wanted to arrange an operation. Dr. Song asked Dr. Roy to record the patient's history, told Cecil that he would ask him to do it later, and filled out the surgery consent form himself. He reminded the patient that he had gone through possible postoperative complications with her and told her the date of her admission and discharge. He checked the list that Dr. Roy had filled out before he closed the curtain to examine the patient. Cecil asked Chris quietly if it were a fast or slow consultation and the latter replied, "Fast". Dr. Song then went to the adjacent consultation room where the next patient was already waiting and the rest of the team followed. Dr. Song told his team that it was a case of desmoid tumor which he advised to read up as it was rather common.[2] The patient expressed amazement that Dr. Song knew what disease it was just from her history and the latter answered that it was because he had seen lots of such cases. He explained that they usually grew on abdominal walls and were mostly benign, and the patient revealed that she had an operation before at another

[2] Desmoid tumors are neoplasms or growths from fibroblast cells that commonly occur in women and may be related to familial adenomatous polyposis (FAP) particularly in those with a history of previous abdominal surgery. FAP is a hereditary condition where numerous (may be hundreds) polyps are found in the large intestine which predispose the development of colon cancer.

hospital. Dr. Song told the patient to watch out if the tumor became superficial and inquired if she had seen a proctologist. The latter replied in affirmative and added that she had two polyps. He assured her that it was all right because she had only two before he asked the students to name the condition in which a patient had lots of polyps. They did not know so Dr. Song told them that he would ask them tomorrow. Dr. Song then instructed Dr. Roy about what to record on the chart: that if the tumor became shallow, it might burst or bleed, so the patient had to follow up with magnetic resonance imaging after three months. After the patient left, Dr. Song reminded the student that they had to be careful about colon cancer in such patients.

Dr. Song went back to the first consultation room to see a patient who had reconstruction after mastectomy from breast cancer. Dr. Song reassured the patient about her body weight, reminded her to follow up after a year, and examined her behind the curtains. Later he explained that he did not allow the team see the patient's condition as there were too many people and he was afraid that the patient might be stressed. The fourth patient was an elderly woman who was accompanied by a younger woman. She had an operation for hernia, had returned to Dr. Song's clinic the previous Friday but there was too much fluid from the drain over the weekend. Dr. Song inquired about the amount and told the students that it was a good example of how they explained about postoperative complications to patients. He examined the wound and told the students to assist in changing the dressing. Dr. Roy also went behind the curtain to help and the

patient remarked that the students had become experts by now. Dr. Song noted that Chris had put on the gloves wrongly and told him to do it again. He taught the students that they needed not put on gloves to change dressings if there were no discharge and where to press so that it would not be painful to the patient when they removed the gauze. The patient asked about the bruising and Dr. Song reassured her before questioning her what he was afraid of. The former replied, "Infection" and told Chris how to place the tapes. Dr. Song warned him not to cut the drainage tube but the patient remarked that she was not worried. The surgeon assured her that he was monitoring the students' actions and that most importantly, he had his hand on the drain. Then he and Dr. Roy taught the patient what to observe for: discharge and infection. Dr. Song told the students that they should wrap up the tube more and demonstrated how to do it. He told the patient to call his secretary every day to report the amount of fluid from the drain and asked her to show him how to pour out the fluid. She did and Dr. Song praised that she was very good. After the patient left and Dr. Song finished typing the notes on the computer, he told the students that he would rather teach his patients how to take care of their own wounds and drains even though it would take him more time, and mentioned an example where he successfully helped a man heal his chronic wound by teaching him how to take care of it himself.

In that manner, the clinic continued where for some patients, Dr. Song dealt with them himself while for others, he had the students to ask the patient questions, such as how to assess

the condition and which tests to order. He would make conversation with his patients, for example he noted that one woman had two young daughters, and he would also praise them when they knew answers to his questions, such as postoperative complications. Dr. Song shared with his disciples analogies he had come up with about the types of doctor-patient relationships, adding that he preferred the last one: (1) like home cooking where the food is prepared with much care and love but one has no choice but to eat the food, i.e. paternalistic; (2) that which is the opposite end of the spectrum and similar to buying food in a supermarket where the prices are labeled for one to pick and choose freely; (3) like buying food in a traditional market where the seller (doctor) may explain each product (i.e. choice or possibility) though the information is given from the seller's point of view; and (4) like going to an upper-class restaurant where one can see the choices and prices on the menu but the waiter will also provide recommendations, i.e. patients are free to decide though the doctor will provide his or her expert suggestion.

The ninth patient had a left axilla mass and Dr. Song used the opportunity to test how Chris took the patient's history:

> Dr. Song to Chris: Next question?
> Chris: When did you notice it? (Answer: Last month, but I feel that it has become bigger)
> Dr. Song to Chris: Next question?
> Chris: Do you have body weight loss? How was your appetite? (Ans: Okay)
> Dr. Song to Dr. Roy: The questions are too fast and they were closed-ended.
> Chris: … (inaudible)
> Dr. Song to Cecil: Next question?

Cecil: Is it soft or hard?
Dr. Roy: Do you have other discomfort? (Ans: Dizziness)
Dr. Song: Your senior is better. Remember, LQQ-OPERA.
Dr. Song to patient: Are there any local problems? (Ans: No)

The history-taking continued for a while before Dr. Song filled it up on the computer. He had a list of templates in it and he called out that for "Axilla mass". He then examined the patient. Cecil pulled the curtain and Dr. Song introduced the medical students and asked the patient to let them palpate the mass. Chris could not feel it and Dr. Song taught him to ask the patient to tell him where it was. He instructed Dr. Roy to palpate it and said that there were fourteen items they had to note about it. He asked the patient about its size and the latter made a gesture with her thumb and little finger that of a pea. Chris remarked that he could not feel the size of the mass so Dr. Song demonstrated how to move his finger up and down after ascertaining its position. Dr. Song told the patient that it felt like a lipoma to him and explained that she could either follow up after three to six months or if she were worried, she could have it excised. He said that it would be a simple procedure that would take about thirty minutes under local anesthesia. He told the patient that he would suggest to follow-up but it was up to her decision so she should think about it. Then he returned to his seat and typed on the computer. The patient said that she would be worried so Dr. Song arranged for her to have an operation that Friday. Dr. Roy filled up the surgery consent form and Dr. Song told Chris to explain to the patient potential complications

from the operation. Chris listed bleeding, pain, infection, and sepsis in elderly and diabetic patients but Dr. Song did not like how he did it. He told Cecil that he would do it next time and mentioned that one of their classmates was very good and could repeat word for word whereas his own junior got it right after ten times. However, he later reflected that it might be better with his junior because the latter would know the reasoning behind each well, unlike those who might memorize the contents without understanding. Then Dr. Shen explained to the patient the three complications and their management: (1) bleeding, whereby they would open the wound, clean the clot, and close the wound; (2) infection: if it were simple infection, they would give her antibiotics, but if it were complicated, they would open the wound and change the dressings so they would not close the wound immediately; and (3) sepsis, the worst complication, when bacteria entered the blood stream and there would be fever and drop in blood pressure; however, it usually occurred when the patient's body condition was poor, otherwise the chances should be very low. Dr. Song told the patient that if the student elicited fear in her after their explanation and caused her to revert her decision for operation, then it was a poor one. The patient wanted to know if she could eat before the operation and the nurse asked for her contact number. Dr. Song completed the pre-operation orders and told Chris to type the findings on the computer.

The tenth patient was a young woman with a black mole on the sole and this time, Dr. Song had Cecil ask questions:

Dr. Song to Cecil: Next question?
Cecil: How long has it been? (Answer: A long time)
Cecil: Is it painful? (Ans: No)
Cecil: Does it stick out? (Ans: No)
Dr. Song: The last two questions were closed.
Cecil: Are there any discomfort?
Dr. Song: Good!

The patient's mother supplied additional history by saying that they had seen a dermatologist and wanted a second opinion because they were afraid.[3] Dr. Song told them that he was a specialist in melanoma and explained that its incidence was very low in Taiwan, about one hundred and seventy-five cases per year, but the malignant type usually grew in the soles in patients here, so he suggested to have it removed even though it appeared all right. He asked the patient about her occupation and told her that she would have difficulty walking after the operation. Dr. Song gave the patient time to consider by typing on the computer and checking what Chris had noted about the previous patient's axilla mass. He added some observations and instructed Dr. Roy to remember them as he would test him at the end of the month. He then told Cecil to take notice because he would have to ask the history next. Returning to the patient and her mother, Dr. Song reviewed the patient's history from the form she had filled up and queried the students what they should note about the patient's allergy to macadamia nuts (bronchospasm or anaphylactic shock) before he examined the patient. While typing up his findings, Dr. Song commented that the color

[3] In Taiwan, most people avoid having operations. The reason may be the traditional Confucian concept of filial piety that one should not damage any parts of the body because it is given by one's parents.

of the mole was uneven and it was reason to remove it. The patient and her mother agreed to have it operated and Dr. Roy filled up the surgery consent form for them to sign while Cecil was asked to explain the postoperative complications to the patient. Cecil looked at his notes briefly and put them away before explaining to the patient. Dr. Song took notes and corrected and supplement what he had said.

With the last two patients, Dr. Song again had Cecil examine and ask questions, Chris to type the notes on the computer, Dr. Roy to fill up the consent forms, while he monitored and checked the team and supplemented further explanations. After listening to Cecil's explanation, one of the patients laughed and remarked that any patient might feel uncomfortable hearing it and suggested that Cecil should tell her what she should watch out for after the operation. Dr. Song thought Cecil had done a good job but added that the patient should not get her wound wet after the operation. He agreed that the explanation was not successful if the patient felt frightened after listening to it even though it was good. The clinic ended at 12:30 p.m. and the team waited for Dr. Song to complete some charts the nurse handed him before they left for lunch together.

Legitimate Peripheral Participation at the Out-Patient Clinic

Dr. Song's patients at his reconstructive surgery outpatient clinic belong to two categories: pre- and post-operative, and we see that with the former, he will teach the students history taking

and explaining about postoperative complications while for the latter, he emphasizes changing wound dressings and managing complications. When teaching about skills or techniques, Dr. Song again shows his keen sense of observation and attention to details, and he shares with his apprentices many useful tips and tricks, for example where to press when removing a bandage so that it will not be painful to the patient and what to do when one's glove were stuck on the tape (answer: cut the tape). As with his proper class, the key feature of Dr. Song's teaching is his use of repetition. He will warn his disciples beforehand that it would be their turn to do something next so that they would pay attention to what was going on. However, it also requires that Dr. Song remembers what he has said and follows through his own demands, otherwise the students will not pay attention to him anymore. He will also tell the students about common problems or important diseases and what to watch out for.

Despite Dr. Song's preference for reducing subject matters to formulas and key points, we observe that he does not perform the tasks mindlessly. On the contrary, he is quite aware of what, why, and therefore, how he is doing something. Furthermore, he is quite self-reflective from the fact that he pondered whether it was better to be able to memorize by rote the exact wordings in the explanation for postoperative complications without comprehension or to get it right after ten times but with full understanding of the subject. On the matter about explaining postoperative complications, we should also note the reason why Dr. Song emphasizes the accuracy of the

content because he is very careful about the use of certain words, such as telling the patient that the wound has to be "opened" instead of "cut" in the unfortunate circumstances of bleeding or complicated infection. I believe that Dr. Song's rich experience and keen observation have taught him that some patients may be uncomfortable when they hear certain words, a point he emphasizes to the students. Similarly, he pays attention to how the students elicit the patient's history, particularly the order of the queries and if the questions are open-ended. Besides medical knowledge and skills, Dr. Song also imparts to his students other aspects of clinical practice, notably how to explain the condition to the patient, and he practices what he preaches as seen from his interactions with the women with axilla mass and black mole on the sole.

Whenever possible, Dr. Song will involve the students in all aspects of his work at the clinic, although with physical examinations, it is sometimes difficult due to cultural sensitivities. The manner in which Dr. Song assigns his team tasks of different levels of difficulty according to their degree of "peripherality" — with Cecil being the newest-comer, followed by Chris, then Dr. Roy — epitomizes what Lave and Wenger described as "legitimate peripheral participation" (1991). I observed that Dr. Song first started by asking Dr. Roy to record the patient's history and telling Cecil that he would be next. When the next two opportunities arrived, he got Cecil to ask the patient questions, Chris to record the history, and Dr. Roy to fill out the surgery consent form. After that, he alternated between letting Cecil and Chris take the history and explain the

possible postoperative complications to the patients while he monitored and supervised them. With Dr. Roy, Dr. Song reminded him to read up about more difficult cases and to remember further details, such as all fourteen characteristics of an axilla mass (with Cecil and Chris, he only required them to get most of the items right). Moreover Dr. Song recruits the patients as "teachers" to the students, for example the elderly woman who played her role well. It obviously gave her a sense of participation and perhaps even empowerment. However, before he allows the students to practice anything, Dr. Song makes sure that they have observed how it is done first and he monitors them closely while they are performing the tasks.

Teaching in the Operating Room

I observed Dr. Song in the operating room (OR) near the end of the month. Dr. Song arrived at the OR at 9 a.m. and operated on the first patient himself. The students had to deal with some orders after the ward rounds so they arrived later. Dr. Roy and Chris came in briefly at 9:40 before they went out again to scrub. When Chris reappeared, Dr. Song reminded the student that he was most afraid of infection in that particular surgery, as it might cause the operation to fail. The scrub nurse taught the student how to cooperate while she put the gloves on for him and told him where to stand next to Dr. Song. Cecil arrived fifteen minutes later and the scrub nurse asked him for the size of his gloves but him did not know. After he had scrubbed, the nurse was

about to help him put on a sterile gown and gloves when the staff in the OR suddenly chimed in chorus, "Exam time!" Dr. Song shared with me about his four learning objectives for medical students at the OR: sterilization, hemostasis, suturing, and drainage, so their first aim was to ensure that the novices could don the surgical scrubs well. Dr. Song delegated minor tasks to his team and tested the students about what he had taught them about various aspects of surgery. When he was closing up, the surgeon commanded Cecil to help him and passed the student a pair of scissors to cut the sutures while he told Chris to ask Dr. Roy to explain what was going on. Later he got Cecil to check the number of gauzes used with Dr. Roy and tested the student about what he had said to watch out for in this operation (infection) and how long they had to sterilize the skin for (answer: thirty seconds). He told Chris to type an order on the computer for the antibiotic that the circulating nurse had administered and Dr. Roy checked the student's work. While Dr. Song wrote out the postoperative orders, he instructed Dr. Roy to teach the students about them. We had an early lunch with *bentos* (boxed meals) in the OR after that. Dr. Song finished eating first, then Dr. Roy, and the two students; I was last.

The next two operations were local excisions so Dr. Song allowed the students to perform certain actions including sterilization, draping, and stitching. The second patient was a young man with a mass on the inner side of his left knee and Dr. Song suspected that it could be a dermatofibrosarcoma, a skin tumor with malignant potential. Dr. Song assigned Chris to be the

assistant and Cecil to chat with the patient. He told the latter to observe what was going on and help write the "homework" later. He explained that it was end of the month so they had to "inspect" the students' learning. Chris first disinfected the skin thrice with iodine and twice with normal saline before he draped the operative field. Dr. Song told Chris, "Good!" when he placed the first two drapes but the third fell off. The surgeon instructed him how to do it and reminded the student that he had made the same mistake the previous time. When Dr. Roy hesitated where to mark the incision lines, Dr. Song drew five circles on different positions of his forefinger and asked Dr. Roy to draw the incision lines for each imaginary mass. He told the latter that he had only scored forty marks and gave him a second chance whereupon the resident scored sixty. Dr. Song corrected all of them and asked Dr. Roy to think about the position of the patient's mass. He informed the patient that they had not started yet and reminded Cecil to chat with the patient. He marked the incision lines himself before instructing Chris where to inject the anesthetic. Dr. Song notified the patient about what was happening and tested Dr. Roy about what to look out for in local anesthesia. The latter gave the wrong answer and Dr. Song explained that the key was to inject precisely on the incision line but not too deep so as not to spread the cancer cells if the tumor were malignant. Chris asked the patient if it hurt and the nurse repeated his question but Dr. Song stopped her. He wanted Chris to do it because the latter spoke too softly. Chris

repeated his question a few times before the patient heard him and Dr. Song joked that the patient should blame Chris if it hurt later.

Then Dr. Roy took over to complete the injection and Dr. Song made the incision. Dr. Song told Chris to move across the table to assist Dr. Roy as he cut by stopping the bleeding first through dabbing with a gauze and later by electrocauterization. He told the circulating nurse to raise the table and asked the resident if it were okay for him as he was quite tall. Dr. Song demonstrated, instructed, and prompted Chris how to aid Dr. Roy, and reminded him about his posture. He praised Chris when the student did something right and questioned him about which instruments to request for certain actions. The surgeon also coached and assisted the resident. He told the latter to tease the fat tissues instead of cutting them, warned him where the blood vessels were, and helped to hold the tissue for cutting. Together they removed the tumor. Dr. Song told the patient that they were closing up and praised Cecil for conducting a good conversation with the patient, claiming that it was even better than the anesthetic. He noted that the latter did not ask personal questions but chatted about things that concerned the patient, such as his symptoms and occupation. In addition, Cecil shared with the patient his own experience with surgery and unlike some students, he did not make the patient feel as if he were under interrogation. From time to time, Cecil would go to see the operation and inform the patient about the progress. Dr. Song told the patient that he did not have to change the dressing afterward though he had to keep

it dry. When Dr. Roy and Chris finished closing the underlying layers, Dr. Song marked the sites for the stitches on the skin and allowed the student to suture. He corrected Chris about which instruments to hold in each hand and observed that Dr. Roy could not open the needle holder well. He shared with the resident the principles for placing the sutures. After the operation, the nurse reminded that someone had to write the "homework" and Cecil who had been appointed the duty at the beginning, asked about what to write. Dr. Roy helped him record the procedure. Dr. Song told Chris that his suturing was good but it was slower, taking fifteen minutes altogether. He instructed Dr. Roy to allow the students write the orders as it was the end of the month, even though it would be more tiring for the resident because he would have to supervise them. He told Cecil that he would have the chance to assist in the next operation which was a tumor excision on the back of the calf. The operation lasted slightly more than an hour.

The third patient had a mass on the back of his right upper calf and the nurse repeatedly reminded the team of the patient's allergy to a certain medication. Dr. Song examined the growth and discussed with Cecil how to incise it. He allowed Cecil to sterilize and drape the operating field. The student opened the cloth wrongly and his teacher had to show him how to do it. Cecil covered the area but he did not know how to place the drape across the patient's body in a sterile manner so Dr. Roy demonstrated on a chair. When Cecil was done, Dr. Song added another drape at the front. Dr. Song supervised Dr. Roy in marking the incision and Cecil in injecting the

local anesthesia. He allowed the resident to cut and the student to help while he instructed, corrected, and guided them. For example, he reminded Dr. Roy not to let the needle drop too low while stitching and told Cecil how he should help the resident. When the tumor had been excised and the layers sewed up, Dr. Song marked the sites for placing the stitches on the skin and allowed Cecil to do it. The student was unfamiliar with the action and Dr. Song had to tell him how to tie a suture and the correct way of holding the needle.

In the above operations, Dr. Song allowed the students to perform minor tasks and Dr. Roy other more difficult tasks under his guidance and supervision. However, he would execute the crucial steps in the procedure if his disciples were not ready yet as in Dr. Roy's situation during the first operation with marking the incision lines, even though he would still teach them so that they could do it next time. During the second operation, Dr. Song allowed Dr. Roy to mark and make the incision. With the students, because theirs were minor tasks, Dr. Song and Dr. Roy were able to remedy the situation if the novices did not execute the jobs well, such as adding a drape here and a jab of anesthetic there, or even re-sewing a stitch. We saw how Dr. Song fully engaged his apprentices in legitimate peripheral participation in many situations even though it took up much more of his time. Furthermore, the rest of the staff at the OR also participated in the teaching.

Linking Theory with Practice

Dr. Song's classes are considered "classic" by many students, meaning that they are very good. When I probed into the reasons, a student told me that his use of mnemonics or formulas helped them recall the important points. She further explained that his method was akin to those popular in local cram schools.[4] I later asked a few senior teachers at SOTH what they thought about Dr. Song's teaching and found out that those who were educated in the West did not like his use of formulas and mnemonics (see also E. Cassell 1997), or various checklists and templates because they thought that it would cause one to become lazy. My observation is, as a product of the Taiwanese educational system, Dr. Song adopted a pragmatic approach to his work and that he came up with those templates and checklists for his own use. He probably tested them to make sure they were detailed enough to cover all situations and to prevent himself from missing anything, for example he had fourteen items to fill in for the description of an axilla mass. However, I did not observe him providing the templates or checklists to the students but rather, he taught them to think about what they should notice. About formulas and mnemonics, I believe he devised them with the same spirit of pragmatism to help neophytes recall what to do. As mentioned, I believe that to be able to come up with formulas requires one to have a very in-depth knowledge about the subject. Like the saying quoted at the beginning of

[4] Cram schools or *bushibans* 補習班 are very popular in Taiwan's meritocratic society to help students gain entry into prestigious high schools, universities, graduate institutes, and civil services.

the chapter, on the surface Dr. Song's classes may seem rather showy or even theatrical, but deep inside it contains the essence and many precious gems about the subject matter. That is why I have resisted using performance (like Arluke 1980 or M. Good 1995 from the learners' perspective) to analyze his teachings. I believe his method of using formulas, repetitions, summaries, and recall (getting students to reiterate the key points) help students remember the contents of his lessons well. Moreover, he augmented theory with practice and linked textbook knowledge to clinical application. During practical teachings, he involves his students in various degrees and ways. Therefore, I totally agree with the students that Dr. Song's teachings are "classic".

My interpretation was supported by Shirley who told me that Dr. Song's methods suit Taiwanese students better as they are very practical and have some framework or structure. She said that the students usually performed better in surgical OSCEs (objective structured clinical examinations), scoring more than 95, compared to their average score of 85 to 90 for internal medicine. Shirley added that in contrast, some students found Dr. Meng's method of teaching "too Western" because she would give them learning goals and let them figure out for themselves how to attain them. Some might critique that because surgery consists mainly of skills and techniques, the learning retains more of an apprenticeship nature, so surgeons can engage their disciples in legitimate peripheral participation better. While it is true that the nature

of practice in surgery and internal medicine differ, I believe that Dr. Song's teachings demonstrate that old-timers can devise means and ways to engage the relative newcomers better and in more meaningful ways. Lastly, Dr. Song's caring attitude endears him to the students and most remember him well. Some even described him as a "mother hen".

Conclusion

The teachings by the surgeon in various settings in this chapter further illustrate some good pedagogical techniques of an expert teacher. He is artful at involving all members of his team to participate meaningfully in their work and learning, and even recruits the patients and other health care professionals to take part in the teaching. By breaking down the tasks and assigning duties of different levels of difficulty to the newcomers and recruiting other relative old-timers in the community of practice, he successfully engages the learners in legitimate peripheral participation. I believe that the pedagogical techniques and skills the surgeon uses are the result of much in-depth reflections about his own methods and demonstrate how much effort it requires behind the scenes to make teaching effective, as highlighted by the quote at the beginning of the chapter.

Part III: The Hospital

We have investigated clinical education from the points of view of medical students and teaching attendings in the first two sections, we shall now look at the macro and structural factors. Aldrich (1987) and Hurley and Kaluzny (1987) emphasized the importance of analyzing medical schools and their training programs as a population of organizations undergoing change in the environment. The literature is abound with negative impacts of hospital culture, such as a hierarchy that leads to flattery (M. Good 1995) or members having to be liked in order to succeed professionally (Light 1980), junior physicians being treated as slave labor and given so much work that they feel depersonalized, detached, and alienated from their patients (Mizrahi 1986; Konner 1987). Hilficker (1985) warned of the dangers of a rigid hierarchy and unhealthy competition that force doctors to socialize in undesirable ways. Yet, learning in the workplace or work-based/related/integrated learning is crucial for developing soft skills such as communication and interpersonal (people) skills, and personal insights (Cord and Clements 2010). In the context of Taiwan, the institutional culture within teaching hospitals is even more important in shaping how novices of medicine view their practice and profession. In the following chapter (seven), we shall see how the people at SOTH establish their unique culture, their clerkship training program, and a community of like-minded people who are self-reflective

about their work. In the last chapter (eight), we shall see how the hospital battle pessimism and negativity through a special discussion with the novices about the problems they face in clinical practice and where they brainstorm and share innovative ideas and solutions, and learn from one another and other health care professionals.

Chapter Seven: The Hospital and Its People

處處留心皆學問
There is knowledge in everything if one pays attention everywhere
– Chinese saying

I chose to conduct my fieldwork at SOTH because I had heard about its good teaching from various people, physicians and medical students alike. When I went there, I found that the staff at the hospital really puts their hearts and minds into their work, as both their own employees and outsiders describe it. In this chapter, I shall look at how the hospital shapes and builds its mission and goals, and how they implement their clerkship training. I wish to emphasize that there is no short cut to good education except investing in teachers, providing adequate resources for them, and building a supportive structure and environment conducive for teaching and learning.

A Hospital with a Heart

Once I attended a feedback session by a group of second-year medical students who had spent two weeks of their school vacation volunteering at various departments at SOTH.[1] The chiefs of the patient services and social services departments were present and in addition to

[1] They were equivalent to pre-medical students in the U.S. and had not begun any basic sciences or clinical courses yet. Thus their work at the hospital involved only general contact with the patients.

receiving the students' suggestions, they responded to and helped clarify what the students had seen or experienced. From their explanations, I had a better glimpse of the internal workings of the hospital. For example, the wards were designed so that each room has a window and patients who had not been placed by the window during their previous admission would be given priority when they were next hospitalized to a bed next to the window. The information is recorded in the computer system along with others such as the site where a patient on hemodialysis has the catheter or arteriovenous fistula or synthetic graft used for access to the blood, so that the staff would know where and how to place the patient when he comes for hemodialysis in a such manner that would be most convenient and comfortable for him, for example, the position of the machine and that of the television screen if the patient likes to watch programs during the four-hour sessions thrice a week. For cancer patients on chemotherapy, the hospital takes note of the location of their port and would arrange for them to be placed in beds with the bathrooms on the same side to make it easier for them to go to the toilets while they are hooked onto various chemotherapeutic medicines and intravenous bags. It was rather impressive to learn that the hospital keeps track on such "tiny" information that would however, make a huge difference to the comfort of the patients. Unlike other hospitals that use "codes" for urgent situations, such as when a patient requires resuscitative measures or in emergencies, such as fires or when the

hospital is about to receive a large number of patients from a major disaster or accident nearby,[2] the staff at SOTH invented creative alternatives in order not to alarm patients and visitors unnecessarily. For example, if a cardiopulmonary resuscitation is needed, they would broadcast over the public announcement system to the effect, "Doctor Sitin (C-team, short for CPR team), please report to Bed XX" and in a major disaster they would page for "Doctor Olstaf" (all staff) to report to the emergency room.

The hospital's reputation for quality patient-centered services is also acknowledged by the medical profession. Many of SOTH's physicians were attracted by its philosophy of providing good health care and services to the patients but they had to endure a significant decrease in their salary when they changed their jobs to SOTH. The doctors told me that they did not mind the pay cut because "it's okay as long as one has enough money for use" and that "when the money is more than a certain amount, the rest is excessive". Of all the clinicians involved in teaching, only a young attending found it hard as the sole breadwinner of his family to provide for his wife and child and pay the mortgage for his apartment. The doctors were quick to point out that their salary was reasonable because their work load was much less than their counterparts at other hospitals. On further analysis, I think that even though their patient numbers are less, the physicians at SOTH care for their patients in a much deeper way. For example, they will go

[2] Most hospitals in Taiwan use numbers such as "999" for CPR and "333" for large numbers of casualties, while hospitals in other countries such as the U.S. often use colors, for example "Code Red" or "Code Blue".

through their patients' charts to understand the histories before the out-patient clinic and spend more time with each patient. Likewise, for those in-patients, the care is also better in terms of depth and width. Therefore, SOTH's physicians make up for the low number of patients with their higher quality of care. Furthermore, as the president Prof. Peng told me during my interview with him, because SOTH provides better care to their patients, the length of hospital stay is shorter compared to other hospitals, making the patient turnover rate faster, and as a result, the physicians' patient load is actually higher. Concerning the doctors' pay, a senior teaching attending told me during my interview with him that the difference between the physicians' salary at SOTH and other hospitals exists for the junior doctors but not at the senior level.

Readers may be curious about how the hospital administration creates a positive ambience and environment to provide quality care and teaching. From my observations, I believe one of the keys is to foster a common goal in their staff. For example, the screen savers on their computers advertise the hospital's mission and vision. These are also printed at the back of their staff's identification cards. Before the grand meetings on the first Friday of each month, the statistics of the hospital staff will be shown on the screen: the total number of employees, gender ratio, breakdown of the number by profession, number of volunteers, number of students, etc. When it is time to start the meeting, Prof. Peng will personally introduce the new staff by calling out their names and departments one by one. The new employees are seated in the first row of

the hall and they will stand up to greet the audience when their names are called. Furthermore, unlike at other hospitals where the topics of the grand meeting are usually medical, at SOTH, they invite people from all walks of life to talk about a wide variety of subjects, most of them unrelated to health. During the period of my fieldwork, they had people who talked about dreams, creativity, oral history of Taiwan, Greek mythology, and mid-life crisis. They also invited a documentary film maker to show two of his works about the country, one of their current employees to talk about his experience being a cancer patient, and someone from their maintenance services to explain about their air filtration system. Once, Prof. Peng also shared with his staff his vision for the hospital and plans to meet their future challenges. Hence, the repetitive reminders about the hospital's core values and direction unite the staff and give them a shared sense of purpose in their work. Another thing that strikes me as different at SOTH from other hospitals is the number and level of participation in hobby clubs by the staff. I often heard various hospital personnel mention their involvement with their fellow colleagues in sports such as squash, cycling, hiking, or mountain climbing, and saw the chorus practice on a certain weekday evening after work. A couple of times, the chorus performed at the lunch concerts held at the lobby of the hospital and I recognized a teaching attending and the clinical pharmacist among the group of singers.

The Clerkship Training Program

As mentioned earlier, the hospital had to make some changes to both their hard- and software before they took in students for clerkship training. For the former, they established a general medical ward for teaching purposes, purchased an expensive Harvey simulator for the teaching of heart sounds, ophthalmoscopes for examining the fundus of the eye and other instruments, and assigned four rooms in their dormitory for the students' use. For the latter, they recruited twelve teaching attendings from various specialties in internal medicine, six surgeons, eight mentors who were senior physicians, and two case managers who had been experienced nurses. They assigned Prof. Tang to be responsible of students' training, Drs. Meng and Shen to take charge of the teachings at the medical and surgical departments respectively, and Shirley to coordinate and handle the administrative affairs for clerks. Later, they requested their radiologists to take turns in holding discussion sessions every weekday morning from 11 a.m. to 12 noon. The teaching attendings in internal medicine have to teach two months per year and during those periods, they can be excused from other clinical responsibilities such as performing diagnostic examinations. However, they still have their twice weekly out-patient clinics to ensure continuity of care to their own patients even though they are exempt from receiving new patients at their clinics. Despite these measures, almost all the teaching attendings find their educational responsibilities rather heavy, especially the young attendings who have just established

themselves in their career and those from certain specialties who do not see patients with generalized health problems. Two physicians with young children also struggle to juggle their teaching duties with their family life and later on, one of them opted to work part-time in order to take care of his children (I asked him why it was him and not his wife who shouldered the responsibility and he replied that his wife, who was a physician at another hospital, earned more than he did). We saw earlier that even some senior physicians find it stressful to care for patients they do not know and who often have myriads of problems outside their own specialty, and having to teach at the same time. A few teaching attendings think that their teams are too big because it may include up to three clerks, three interns, and a resident or two nurse practitioners (about the latter, I shall explain shortly how it came about). A couple of the physicians feel they are not supported enough by the hospital in their interests to conduct research while two other young attendings believe that they are ill-equipped for teaching. Although the teaching attendings have been provided with guidelines on what the students should know and learn during their three months at SOTH, some of them confess that they do not actually know what they should teach for students at different periods of their clerkship, i.e. those at their first month compared to those at their third or last month in internal medicine. Yet, to Dr. Meng and Shirley who have very close contact with the students, they can distinguish the difference in the levels and needs of those students who are just beginning their clinical training from those who have

already been through other rotations, and they will modify the contents of their orientation and adjust the topics of the classes they arrange for the different batches of students. I have already described the introductory session and the orientation in detail in the first chapter so I shall explain other features of SOTH's clerkship program in the following.

The mentorship program

SOTH's mentoring system is unique[3] and it proves the level of dedication and commitment the hospital has towards teaching. As mentioned, the mentors are doctors who are not in-charge of grading the students (hence they cannot be teaching attendings), whom the students can share their problems with, especially non-academic ones. For each batch of clerks, one to two students will be assigned to a mentor. I found out from Shirley that it is usually one of the two interviewers the students had when they applied to the hospital. Shirley told me that her assumption is that the mentors will have a better understanding of the students and they can also know at the end of the year if their opinion of a particular student were right during the interview. The mentors normally meet with their students once every week or every fortnight to talk with them informally about their learning and how they are doing. I often saw two mentors treating their mentees to lunch at the hospital cafeteria. Others would meet them at their office regularly

[3] Even though all medical schools in Taiwan assign mentors to each student when they enter the program, I am not aware of any teaching hospital that provides mentoring to medical students during their clinical training.

while a few took a more hands-off approach and would only meet with the students if they had problems or wanted to talk. The mentors also meet once a month to share information with one another about the students and Prof. Tang will give the feedback later to individual students. During my fieldwork, one of the students had some problems in her family and she found it very helpful to be able to talk and consult with her mentor. SOTH found the mentoring system quite beneficial to the mentees and they began to extend their mentoring system to their residents and young attendings later.

The application process

REMS students who are interested in SOTH's clerkship program have to make a formal application that consists of a curriculum vitae and a statement of purpose which can be written in English. The materials are assessed by two to three mentors in terms of the essay organization, ability to communicate, expression of motivation, commitment to clinical medicine, and the assessor's extent of recommendation about the applicant. Before the interviews, the mentors will meet to discuss about the applicants. The interviews usually take place on a Saturday at REMS. Each student is interviewed by two mentors separately for a duration of half an hour each. The questions asked during the interviews depend on the individual interviewer and also the answers the interviewee provide to previous questions. The students are assessed for their ability to

communicate; maturity and ability to work with others and leadership; ability to meet challenges and work under pressure; commitment to serve others as a physician; enthusiasm, initiative and self-directness; and given an overall rating. Despite their efforts, I often heard during student assessments and other meetings that the main problem the mentors have at SOTH is to find ways to seek students who would benefit from their kind of training.

Student assessment and feedback

Before the end of each month, usually during the last week, two meetings on student assessment will be held with the teaching teams and mentors. In the first, Dr. Meng will preside over the case managers, residents, and teaching physicians, with Prof. Tang, Shirley, and the secretary in-charge of internship training in attendance. Each team will go over the performance of individual clerk and intern, starting with the case managers who report their observations about the personalities, clinical knowledge and skills, attitudes toward work and learning, behaviors including interactions with patients, their families, peers, near-peers, and staff of each learner, followed by the residents and attending physicians. The reports by the various teachers differ slightly according to their lengths and nature of contact with the learners: the case managers usually have more to say about the personalities, attitudes, behaviors, and even appearances (how they dress), while the residents may share about their observations on

knowledge, skills, and behaviors in the wards and while on-duty, and the attendings mostly note about the learners' performance during ward rounds and in chart writing. After each report, Dr. Meng will usually ask a few clarifying questions while Shirley may also add her observations. From their reports and exchanges, I discerned that some of the better qualities the staff at SOTH look for in the learners include, personality-wise: outgoing, friendly, easy going, optimistic, happy, etc; for attitude: proactive, hard-working, caring towards others, cooperative, etc; on knowledge: ability to relate or apply textbook knowledge to clinical situations; about behavior: ability to get along well with others, willingness to spend time with their patients and families. Some less desirable characteristics include: over- or low-confidence, laziness, passivity, tardiness, not answering phones or showing up while on-duty, copying others' notes, not spending enough time at the bedside, unfriendliness towards others (peers, patients and families, or other staff), etc. If a learner is good in all aspects, Dr. Meng will usually ask if the person has improved from the previous month.

The mentors' meeting is chaired by Prof. Tang who is also a mentor, with Dr. Meng, Dr. Shen, and Shirley in attendance. The interns do not have mentors so Shirley's colleague does not attend these meetings. The mentors will report about their mentees' personalities, attitudes, and self-reported learning difficulties and other problems they gathered from their interactions and meetings with them. After the assessment meetings, Prof. Tang and Dr. Meng will see the

students individually to provide them with the staff's feedback, give the student a chance to response to the feedback, and collect the student's thoughts and suggestions about the training program. Before the end of the rotation, two student representatives from internal medicine and surgery will be invited to give their feedback to the teaching teams and mentors at the end of the assessment meetings.

A Community of Reflective Practitioners

In my opinion, what is most remarkable about SOTH is the level of self-reflection the doctors exhibit and I believe that they form a "community of reflective practitioners" to combine the theories of Lave and Wenger (1991) and Schön (1983). I was rather impressed how once during a mentor meeting, some mentors initially expressed disappointment with a batch of PEMS clerks but they quickly reflected that they might have had too high expectations of them. Another incident happened during a morning meeting. The invited speaker was an eminent physician from a medical center who came with a "drug rep" to talk about a new medicine. A senior physician in the audience accused the speaker of biasness in his presentation as he did not elaborate on the adverse effects of the medication and suspected that he was being paid by the pharmaceutical company for promoting the new drug. A heated debate ensued. The speaker explained that he had asked the sales representative to drive him to SOTH that morning and had

invited the latter to attend his talk while waiting for his return journey. Some of the audience spoke up for the speaker but a few were insistent that the speaker was in the wrong. The speaker left in a foul mood and some of the staff continued to argue about the matter. In the end, Prof. Peng asked a senior doctor to share with their colleagues his experiences about the issue of conflict of interest in physicians at another morning meeting. The following month, the physician talked about his experiences in the U.S. and the current recommended policies on the topic. After his talk, there were more debate and reflection about what happened during the previous meeting and how the hospital should proceed to avoid influence by pharmaceutical companies. I should explain that before the incident, the hospital had already banned their staff from receiving and using things given by pharmaceutical companies, such as pens, small notepads, folders, or meals. The spirit of inquiry at SOTH also extends to their other practices and ways of doing things. I often witnessed how the senior teaching attendings and the mentors questioned and discussed what they were doing, if they were doing it well, and how they could make it better. For example, during a student selection and recruitment meeting, a mentor posed a question about the kind of students they wanted to accept for their program and asked if they preferred to choose those bright students or those who would benefit most from their more hands-on teaching but who might not flourish at other hospitals. They also questioned if their method of student selection was efficacious and if it had the ability to distinguish those students they desired to recruit. At

the end of the clerkship, they would closely scrutinize if they had made the right choice in their students. Unfortunately, these dedicated educators did not find the answers to their questions during the period of my fieldwork. Returning to that eventful morning, the passionate exchange that day was quite commonplace at SOTH, although some students were shocked to see junior doctors arguing with their senior counterparts including Prof. Peng. At most hospitals in Taiwan, health professionals maintain a rigid order of hierarchy according to seniority and field. However, at SOTH, Prof. Peng and the administrators actively encourage the staff to speak their minds.

A professor I knew from a medical school who visited the hospital after I finished my fieldwork told me that she was amazed to see a physician openly admitting his mistakes to the students during a Clinical Humanities Discussion at the surgical department. From her description, I ascertained that it was Dr. Shen, the doctor in-charge of surgical training. Dr. Shen was sharing with the students about a failed operation. He had planned to dissect a tumor but when he opened the patient up, he found that it was impossible to remove the growth cleanly and completely. In hindsight, he admitted that he had been rash with his decision to go ahead with the surgery because he had been over-confident of himself and had wanted to prove that he could still beat the odds. The professor could not believe that a doctor would be willing to confess to his own shortcomings in front of others, least to say a group of young students. From the

electronic mail she wrote to me, she told me that she believed that the physicians at SOTH practiced what they preached. Below is my translation of excerpts from her message:

> The effect of the clinical humanities reflection that we [currently] do will be limited if we don't have such a group of doctors who can be role models [to the students]. The students will only clarify their knowledge and concepts, but will not generate action. The doctors at SOTH set an example themselves by not just conducting discussions, but through reflecting together with the students their collective actions in the provision of care. This is not only an ethical judgment about what is right or wrong, or a query in search for answers, but rather, it is "learning through example": through the humanities discussion, the teachers demonstrate to the students the thoughts and feelings of a humanistic physician.
> …I have been interested in "self-authorship" in learning; students in Taiwan need to establish this state. The SOTH physicians all exhibit the state of self-authorship. I see how foreign educators attempt through self-critique to initiate self-authorship in their students. What I saw yesterday at SOTH was the combination of teaching through "role models" and "mentoring". I think that if [we] use SOTH's method, it may be more effective in inspiring self-authorship in [our] students. This method of teaching was also used in ancient China during the Zhou dynasty. It includes rational analysis and sentimental calling, so as to initiate action.

Once during lunch, Dr. Ruan, a radiologist who is also a mentor, joined us. The talk soon turned to the morning meeting earlier that day, which was a "performance improvement conference" (PIC), otherwise known as "morbidity and mortality conference" (M&M) at other hospitals. Dr. Ruan reminded the students that the difference between the PICs at SOTH and most M&Ms at other hospitals was that in the latter, there would be lots of finger-pointing about who was wrong, whereas at SOTH, they were mainly honest evaluations of what happened. Prof. Tang, who was also present, thought that the PICs at SOTH were "critical reviews" of their own

mistakes and not criticisms. Dr. Ruan then shared his own experience of having to report at such a meeting once two years ago, the date of which was imprinted in his mind. It was a patient with nasopharyngeal carcinoma who had been treated with radiotherapy but who was experiencing recurrent symptoms. Dr. Ruan was asked to perform a biopsy and the patient had bleeding on the third day after the procedure. He had to report the complication at a PIC later and confessed that it was difficult to face his own mistakes. However, he remembered the "Do no harm" principle and the discipline of the medical profession. He was supported by his colleagues, including a senior physician, and he believed that the environment in SOTH also helped. During the PIC, Dr. Ruan had to review the entire process second by second and he saw where he should have done differently, what he neglected to do, and when he should have called for help. Through that, he learned that he could not flaunt his seniority, even though it was his twentieth year at the hospital and the tenth time he was doing the process. Less than half a year later, Dr. Ruan had to perform another similar procedure. Initially, he was very hesitant about it but eventually, he overcame the psychological hurdle. Afterwards, he found that it was a healing process that he needed, despite the fact that he felt like "being thrown into a washing machine". Upon hearing the description, Prof. Tang immediately asked Dr. Ruan whether it was a wet or dry wash. The latter replied that he did not know but would give him the answer later. Dr. Ruan added that after that, he could very well empathize with those who had to report at the PICs.

The positive atmosphere, sense of belonging, and the community of reflective practitioners at SOTH make it easier for the staff to implement changes. I had a hint about that during one of the Clinical Humanities Discussions where Prof. Tang encouraged the students to find like-minded people, or "birds of the same feathers" as he jokingly described his colleagues at SOTH, to work with. He mentioned an example that happened after he arrived at SOTH years ago. He saw that the morning meetings were rather inefficient as the presenters took up too much time, so he gathered some other physicians together to change the problem. They would go through the presentation with the speakers beforehand and limit the length of their report to allow time for discussion afterwards. They also encouraged speakers to provide "take home message(s)" at the end.

The Handling of a Student Who Defied a Test

An incident highlighted SOTH's tolerance about different perspectives, even in students. Students in their surgical rotation had to undergo a test whereby they had to insert an intravenous catheter on a patient. It was Dr. Shen's idea and he wanted students to understand that they might not be always be successful in what they do in clinical practice and that they had to learn how to face their failure and rebuild their relationship with the patient again. The purpose and intention of the test were communicated to the students beforehand. Once a clerk, Carey, refused to carry

out the procedure. She was rather stressed about it and sought out her mentor later. She told her mentor that it was unfair to the patient who had to suffer the pain unnecessarily and the nurse who had to clean up the trouble and mess for her. Her mentor responded that he was happy that she did not just follow the orders blindly but he urged her to tell the teachers her concern. The surgical teaching teams discussed the matter during their assessment meeting. Dr. Shen remarked that the purpose of the test was intentional stress and thought that some students might not be brave enough to face the challenge, for example Carey's classmate, Cyril, who wrote in his learning journal that he asked a nurse to fill in for him during his test but regretted it later. Prof. Tang thought that Carey took it too personally but lauded the surgeons for allowing Carey to do what she thought was right.

When I asked Carey later about it, she told me that she understood the teachers' point of view about the purposes of the test but she revealed that she knew at the moment she placed the tourniquet on the patient's arm that she could not do it, so she decided to call it off. She said that she needed more practice and did not want to harm the patient or be a burden to the nurse who accompanied her. The nurse told her afterwards about how they often had to face the patients' wrath about their doctors' actions. Cyril added that their teachers had refused to allow them to practice among themselves first, like his experience in Germany a few months before that. He also felt that they should have inquired about the patient's feelings or volition about the matter

beforehand. I posed a hypothetical scenario where they were at the emergency room and everyone was busy so they had no choice but to perform the task themselves, and Carey and Cyril said that they would explain to the patients then.

Later I sought the opinion of Carey's mentor about the matter. He thought that Carey had problems with it but not her other classmates because she was more sensitive. He thought the test was all right as long as the surgical team provided the students with adequate support, for example they had a nurse or resident at hand to cover them. However, he believed that students should not give up easily even though they were encouraged to know their limits. The incident showed how the teachers respected the student's opinion even though it differed from theirs. I do not believe that it would be the case at other hospitals that have a rigid hierarchy where the junior staff did not have a voice at all. Traditional theories of learning would view the incident as "failure to learn", while Chaiklin and Lave (1993) concluded that because knowledge is contextual, non-learning can be seen as different kinds of learning, which was how SOTH's educators interpreted the incident too.

Later Changes in the Macro Environment

During my fieldwork, SOTH was also caught up by changes in the greater environment. It was unable to recruit enough residents and had to use nurse practitioners in the medical teaching

teams. Before that, the hospital already had nurse practitioners in some units and in the surgical teaching teams. The nurse practitioners were experienced nurses and they were allowed to perform most of the tasks of a resident doctor, including taking the history, conducting a physical examination, ordering diagnostic tests and procedures, prescribing most medications, and making referrals. During the first few months when nurse practitioners were recruited in the medical teaching teams, it was not clear to everyone, including members of the teams, what the responsibilities of the nurse practitioners were, how much they were allowed to do, and what role, if any, they should or could play in teaching the students. Concerning the latter, the nurse practitioners were weaker in their medical knowledge, even though some of them had more clinical experiences in certain areas, so most of them were also learning from the teaching attendings. I observed that a couple of them even vied with the students for the attention of the attending physician. The result of the shortage of residents and the use of nurse practitioners extracted a toll from the teaching attendings as they already had rather heavy duties and responsibilities.

Another consequence of the shortage of residents was that SOTH was forced to decrease the number of students they could accept for clerkship the following year, despite calls from collaborating schools to increase their quota due to the popularity of its training program. Furthermore, there was a period of time when students from REMS and PEMS did their

clerkships together. It was the first and, as Shirley assured me, the last time they would mix students from two medical schools together. Even though the total number of students at any given moment in each department was still the same as a result of cutting down of the quotas from each school, there were certain periods when the teaching attendings had students at dissimilar stages of their clerkship due to their different lengths of time there (it was six months for REMS students compared to three for those from PEMS). However, it was a rare opportunity for the students to meet their counterparts from a different school and they discovered their similarities and differences, learned from and competed with one another.

Another change that occurred while I was there was that the other case manager transferred back to nursing work. I asked her for the reason afterwards and she told me that she preferred clinical practice to the work of a case manager. Indeed, I observed that she had far less interactions with the students and although she was quite friendly, she would not voluntarily assist the students like Maria did, nor watch out to see if they were having problems. Maria thought that because the other case manager was single and did not mind working night shifts, she could earn more pay working as a nurse than a case manager. The person who took over her position as case manager was an experienced nurse who was married with children. Like Maria, she was also quite friendly and helpful, and would actively seek out those students in trouble.

Last of all, later in my fieldwork, SOTH began accepting medical graduates for their post-graduate year (PGY) of training. These are "post-interns" and "pre-residents", and as such, they are also considered to be "in training" by the hospital especially because most of the men have to take a break in their medical careers to complete their compulsory military or civil service. During my fieldwork, those PGYs that I met were all men who returned after their military service, had not been to SOTH during their clerk- and internships for various reasons (one applied but was not accepted, some were from schools that did not have collaboration with SOTH's training program), but who wanted to get a taste of what the training was like at the hospital. When I inquired whether they would stay on at SOTH for their residency, only one expressed interest, while the rest were more interested in training at other larger hospitals.

Conclusion

In this chapter, I have highlighted how the staff at SOTH pays attention to their work which illustrates the quote at the beginning that one can always learn something from any- and everything if one is conscientious about it. In other words, "the devil is in the details", as Prof. Peng often says. I have also described how SOTH creates a positive atmosphere and sense of belonging among its staff, and build up a community of practice that is self-reflective. I also explained the details of its clerkship program and the changes in the greater environment later. I

wish to point out that the success of SOTH's clerkship training program is not just based on the dedication of their staff and teachers, but also their willingness to invest resources for the time, space, equipment, and manpower required. This partly answers my question about what administrators of medical education can do to facilitate learning and practice.

Chapter Eight: Sharing Talk about Being a Doctor

師者，所以傳道、受業、解惑也

A teacher is one who transmits knowledge, teaches the profession, and resolves doubts

– Han Yu[1]

In this chapter, I shall look at how SOTH deals with the "non-medical" problems medical students face in their clinical practice through regular group discussions. I will demonstrate the various strategies used and functions attained. The Clinical Humanities Discussions at SOTH grew from the mentors' finding early on in their REMS clerkship training program that their mentees had some common problems relating to their clinical training and they wanted to get together to provide group counseling to all them. Professor Tang had heard from a senior staff at another teaching hospital, the Koo Foundation Sun Yat-Sen Cancer Center (SYSCC), about their Humanities in Medicine seminars.[2] It consists of small group discussions whereby students bring up and talk about "non-medical" issues and problems they encounter in their clinical practice. The SYSCC settled on using this model after a series of failed experimentation with other methods, including sharing of experiences by senior physicians, discussion of good literature, and appreciation of films or music about medical dilemmas or life processes, such as

[1] The saying was from the essay, *On Teaching* (*師說*), by the Tang scholar 韓愈 (768–824 C.E.).

[2] For details of the program, refer to C-W. Lai 2014.

growing old or dying. In the end, it found that using case discussions based on real examples of the students' clinical experiences to be most effective and helpful to them. Prof. Tang thought that the model might be useful for them and introduced it to the mentors at SOTH. The mentors were all rather enthusiastic about the idea and they started the Clinical Humanities Discussion (CHD) with Prof. Tang and Dr. Hong, a pediatrician and mentor, as the main facilitators for the discussions with the rest participating on occasion.

The CHD orientation is usually held for the clerks and interns by Prof. Tang and Dr. Hong on their first Friday at the hospital. The facilitators would emphasize to the participants that its purpose was to allow students to raise questions or share problems or issues from their own clinical practice, so they could speak their minds freely, and to let them to think and reflect. Each teaching team would meet every fortnight but before the meeting, the students should submit questions they had from their patients to let the facilitators know the subject of discussion. At the meeting, the student who submitted the question would make a report, after which the rest could supply their feedback and viewpoints. The facilitators would also give their ideas and suggestions, and when appropriate, share relevant literature or references. Students were also given information about the CHD in the student folder they received from Shirley during their orientation. It included possible topics for discussion that many students had brought up during

the past years and references such as articles by students at SYSCC published in a local journal.[3] Since those were written by their peers with similar experiences, Prof. Tang thought they would be most useful to the students. Another reference is "Life Lessons", a ten-page English article about the Living with Life-threatening Illness course at the Harvard Medical School (Ruder 2006). It was an elective course for first year medical students, which is equivalent to third year students in Taiwan, who were paired up with a patient with a life-threatening illness for a duration of four months during which the students would accompany them on various activities such as visits to doctors, to buy medicines, take walks or run errands. Each week, the students met with their two teachers, a husband and wife team, one of whom is a general internist specializing in palliative care while the other is a psychiatrist, in groups of six to seven students to discuss their experiences. The experiences allowed the students to have many different ideas about what they want to do when they become doctors later on and they learned three key things: (1) how to say hello, (2) how to listen, and (3) how to say goodbye. The last item often had a huge impact on the students initially but would become a very good experience later on.

[3] The journal is 當代醫學 (*Medicine Today*). It has a column for medical students.

Sharing Stories and Strategies

Over the years that Prof. Tang and Dr. Hong conducted the CHDs, they knew that the students would face certain difficulties related to their novice status and they tried to share creative solutions they had heard or learned about early in the students' rotation. Once during the latter half of a CHD orientation session, a student asked about a thirty-five-year-old patient who was recently diagnosed with an incurable debilitating disease and would not speak to them. After eliciting the opinion of the students, Prof. Tang summarized their suggestions and shared with them a story he heard from a colleague at another hospital, about the latter's own experience in the United States when he was a chief resident. He noticed that one of the students in his team knew the details of the patients and their families very well and he followed the student to observe how the latter interacted with them. He discovered that the student would tell patients during his first meeting with them, "As a student, I am at the bottom of the totem pole. I don't know much but one advantage I have over the others is that I have lots of time. So if you have any questions that you would like to tell the attending, but he may be busy or you may have forgotten to do so during the ward round, you can tell me and I'll relay the information to the team at an appropriate time." Prof. Tang wanted to use the story to illustrate that even though the students might feel incompetent because of their limited medical knowledge, they could still help their patients in many different ways. Then returning to the case, Prof. Tang urged the students to

think from the patient's perspective — one who had been recently diagnosed with a serious medical problem — and explained that even though it was impossible to relieve her anxiety within a short time, they could listen to her worries and complaints, following what the "Life Lessons" taught. He stressed to the students that if they could listen and understand the patient's difficulties, they would be able to accept her state even if she were in a bad mood and scolded them. Then he taught the students that if the patient was tired and wanted them to leave, they could say to her, "You're not feeling comfortable now. It's all right. Maybe I can come back when you are better?" He believed that if they returned repeatedly, the patient would know that they cared for her after a few times and that they wanted to understand her. Prof. Tang shared with the students the story of one of their seniors who was refused to be seen by a patient, but through persistence she eventually established a very good relationship with him, so much so that when he was discharged, the patient specially gave her a present and not to anyone else. Dr. Hong added that she had her share of being turned away by patients when she was a student and later in pediatrics, by parents of young patients, but she encouraged the students to have confidence with themselves and to exhibit sincerity in their interactions with their patients. She comforted the students that they would eventually be able to win the trust of their patients. She recounted the story by another senior who had an old patient who was depressed about her illness. The student began collecting jokes to tell her patient every day in order to cheer her up and she

succeeded. Dr. Hong concluded that students could still have a sense of accomplishment despite their novice status.

In the discussion, what the two CHD facilitators had done was to provide concrete examples of possible ways of relieving the students' awkward situation of being novices in medicine. Here, the examples were gathered from the facilitators' own experiences or stories they heard from other teachers or students. From his vast experience interacting with students, Prof. Tang found out that students were most interested in examples of their peers or near-peers, such as their seniors. The reason could be because the seniors are walking just a step or two ahead of the students in their career path, so their situation is closest to that of the students. However, even though Dr. Hong was much older than the students and hence farther down the path from them, the students also appreciated her sharing about her own earlier bad experiences, perhaps because it showed them that even someone as accomplished as her had gone through difficult challenges. Prof. Tang, in addition to providing examples, also demonstrated what one could do in certain situations, for example, what to say to the patient when she was tired. This is particularly useful to students who do not have much real-life experiences. Another method Prof. Tang used is to divert the focus and attention away from the students themselves to their patients and in doing so, diminish their sense of failure when they were being turned away, i.e. "it's not about you", to the situation and problems their patients may have, e.g. they are not feeling well and therefore do not

wish to have company. The use of stories is helpful for listeners to remember certain events or happenings. It is often used in the CHD by the facilitators to illustrate in a livelier manner certain points they want to make and particularly, experiences and strategies they wish to share with the students. I believe that the telling of stories also has an important role in transmitting core values about the hospital. There is evidence that good stories get shared around by the staff at SOTH, even by workers in the laundry room who look upon the medical students as future stars of their profession and the society. We also recall how one student, Cathy, once had a difficult patient who was very nice to the attending physician but would ignore and even be nasty to the rest of the staff, including nurses, residents, and medical students. After a few days, Cathy asked her attending physician, Dr. Han, for assistance and when the latter saw the patient during the ward rounds, he introduced Cathy properly as a member of the team and told the patient that she would become a "big" (meaning: great, renowned) doctor one day. So the notion that the medical students will become important people later on is widespread at SOTH.

A favorite story Prof. Tang liked to share on effective communication goes like this: a few years ago when Taiwan was going to implement objective structured clinical examinations (OSCE) for assessment of medical students, he participated in a group that visited the Morchand Center at the Mount Sinai School of Medicine in New York, U.S.A., which is quite big and receives students from six medical schools for training and testing. It has a central control room

where people can observe what is happening at each test site. The tests were portrayed by standardized patients (SP)[4] and the particular case involved the wife of a patient who had a heart attack at work and was dead on arrival at the emergency room. The job of the medical student was to inform the SP that her husband had died on arrival at the ER and because the cause of death was unknown, an autopsy was needed. Each student had seven minutes to perform the task. The SP was a very good actress, as most SPs in New York City are actors and actresses, so they can act very well. When the medical student told the SP that her husband was dead, she became hysterical and cried out loudly, "He was okay this morning and we had coffee together. You killed him!" The medical student tried to explain that the husband was dead on arrival, i.e. he had no vital signs at the ER, but the actress kept crying. Time was running out, so the student said, "By the way, we need your permission to perform an autopsy." The actress became even more emotional, "What? You killed him and now you still want to cut him into pieces?" and berated the medical student. The student saw that he didn't have much time left, so he asked, "Can you give me the phone number of your son or daughter?" That was the end of that session and after that, the SP had to assess the student. From the monitor in the central control room, the observers saw that she gave the student the lowest score in every item. After that, another student went in

[4] A standardized patient is someone who has been trained to portray, in a consistent and standardized manner, a patient in a medical situation whereby a student will do a brief medical interview and/or a focused physical examination for the purposes of teaching and assessment.

and told the SP the same thing, and again the actress cried. The student did not do anything but held the SP's hand for about one-and-a-half minutes before telling her, "Ma'am, if I were you, I would be in an even worse state. I can't believe that someone who was well this morning would turn out so. I understand your feelings completely and I think you have managed to control your feelings well." The SP stopped crying because she did not know how to react and the student continued to comfort her. Later he said, "By the way, I believe that you would be suspicious about his cause of death. We, too, are very concerned. The past is gone but we can do something about the future. We are most afraid that it is a hereditary problem and we don't know if it'll happen again.[5] So for the sake of science, we would like to know the cause which may also be useful to you." The SP was speechless and the student continued to explain and convince her. The entire process was very smooth. The incident gave Prof. Tang lots of thoughts. He shared with his audience, "We often encounter such problems and how well we communicate with our patients depends on whether we stand at the same level with them and then bring them up together", and he gestured with raising hands, palms opened upward, as he concluded his story.

[5] The student meant that the husband might have died of a hereditary disease which might be passed on to their children and in turn, let them be at risk of a sudden death too.

Combining Theory with Practice

Another method the facilitators use is to introduce good frameworks or guidelines that can aid the students' thinking and allow them to practice good medicine, for example, the SPIKES protocol for delivering bad news (Baile et al. 2000), the four-box method for clinical decision making (Jonsen, Siegler, and Winslade 2010), and the five stages of loss and grief by Dr. Kübler-Ross (1969). In actual fact, some of the students were familiar with some of the theories but most had forgotten its contents. So the students are reminded or introduced to these theories in the clinical phase of their training. The discussion below demonstrates such an instance. Once Carol reported about a seventy-five-year-old chronic hypertensive and diabetic woman who had been on hemodialysis for twelve years. The patient exhibited signs of dementia two years ago and she had been cared for by an Indonesian attendant since. She was transferred from the intensive care unit four days ago where she had been treated for septic shock from a community-acquired pneumonia for three weeks. The patient was a widow who lived with her only son, his wife, and their two young daughters, but she was mainly cared for by her eldest daughter who lived nearby during the day. The daughter raised the issue of "Do Not Resuscitate" (DNR) order with the team but the son was reluctant to sign the form. The team could not know the patient's wish because her dementia made her confused most of the time. In addition, she

could not speak due to a tracheostomy and she was illiterate so she could not read nor write to communicate. Carol asked how the health care team could assist the family. As usual, Prof. Tang requested the opinions of the students Clara thought that the son might not want to make the decision because it was too stressful for him. Cody suggested finding out more about the patient's personality and background before she was ill and even asking her attendant for her observations. Ives seconded Cody's suggestion, while Iris thought that the daughter should know more about her mother since she had been the main caretaker. Prof. Tang praised students for being observant about the patient's situation, including her foreign attendant, but Maria reminded the students that in the Taiwanese culture, it is the sons who have more say than the daughters. Carol questioned if cardiopulmonary resuscitation (CPR) and advanced cardiac life support would be beneficial in the patient's situation. Prof. Tang shared with the students the four-box method for clinical decision making that was developed by three clinical ethicists: Jonsen, a philosopher, Siegler, a physician, and Winslade, a lawyer, which consists of four topics: (1) medical indications, (2) patient preferences, (3) quality of life, and (4) contextual features (Jonsen, Siegler, and Winslade 2010). For medical indications, Prof. Tang quoted the statistics for survival from CPR: it is zero in patients with septic shock, acute stroke, metastatic cancer, and severe pneumonia, and very low — between two to four percent — in other circumstances such as hypotension, AIDS, renal failure, homebound lifestyle, and age greater than seventy. He

taught the students to appeal to the family to help the medical team understand the patient's preference by asking questions such as, "Because you understand the patient better. If the patient is conscious, how will she say about this matter? What does she want?" Concerning the quality of life, Prof. Tang emphasized that it had to be in the patient's terms. The contextual features consisted of the social, legal, economic, and institutional circumstances. In the end, the students shared their feelings about the discussion. They appreciated the different perspectives that the four-box method encompassed and Carol remarked that it was good for them to have some framework to rely on for thinking. Prof. Tang ended the discussion by a quote from Dr. Francis Peabody, "the secret of the care of the patient is in caring for the patient" (1927: 882).

Another time Ivy reported about a cancer patient who had agreed to DNR, was admitted for an infection and refused to be discharged. Prof. Tang explained to the students the five emotional stages a patient faced with the reality of impending death might experience that was introduced by Dr. Elisabeth Kübler-Ross (1969) — denial, anger, bargaining, depression, and acceptance — to draw their attention to the states of mind the patient might be going through. He demonstrated how to show empathy with these patients, for example by saying, "This feeling is awful, how long has it been…?" He reminded the students that during the last stage of life, the work of health care professionals should be about accompanying patients, i.e. understanding their suffering. It requires health care workers to have empathy and be calm. Prof. Tang also alerted

the students to the fact that the patient might feel that she was being abandoned by the medical team because she had signed the DNR order, a common misconception many people have about DNR in Taiwan. Prof. Tang ended that session by recommending the movie, Wit, about a professor of English literature who was diagnosed with end-stage ovarian cancer, because from the movie, one not only understands the physical and emotional states of a cancer patient, one can also learn about how patients feel about the health care profession. Dr. Hong urged the students to learn from their patients so that they could help more patients with similar situations later on by using the analogy of patients as people walking a few paces in front of the health care workers, and the latter pointing out the way in turn to other patients behind. Once again, through the introduction of some theoretical framework or use of stories, coupled with demonstration of real examples of words or action, and ending with references to quotes, poems, books or movies, the CHD facilitators attempt to guide the novices by using various forms and media, both concrete and abstract. In this manner, the references become more relevant and meaningful to the students.

The CHD has another function, which is that of enhancing interprofessional education by inviting various health care professionals to participate and contribute in the discussions, as we shall see in the following. The discussion was about arrangement of home care and so a social worker, Wendy, was present for the session. Colin reported on an eighty-two-year-old man who

had been repeatedly admitted due to various infections from poor self-care. A few of the REMS students had taken care of the old man during their medical clerkship, which was at its end, and they did not know what to do. Prof. Tang urged the students to understand more deeply the reasons for the wife's reluctance to hire help, while Wendy reminded them about the importance of knowing the family's views of the patient's disease and treatment. Prof. Tang then told a story he witnessed at a grand round in a prestigious medical institution in the U.S.: a patient returned to the emergency one day after discharge because of bladder distension and it was found out that his Foley catheter had been clamped. A physician coined a name for the patient's problem: "transitionitis".[6] Prof. Tang used the story to warn students that patients are often neglected after they return home from the hospital, so it is important to plan for their discharge well and early. After some discussion, Wendy filled everyone in about the family's financial situation and described what her department could do, for example provide subsidies and relay available governmental resources. Prof. Tang emphasized that discharge planning requires an interdisciplinary team and reminded students to seek help from other colleagues such as nurses and social workers. He shared about two trends in medical education that are focusing on long-term follow-up of patients, one being the longitudinal integrated clerkship at Harvard and similar programs, e.g. at the University of California, San Francisco, and another is post-graduate

[6] The suffix, -itis, refers to an inflammation, for example, appendicitis is inflammation of the appendix. Here, it is added to the word, transition, to refer to the change of the patient's state from hospitalization to being discharged.

training during residencies. The pros include decreased hospital stay and medical students and residents becoming more concerned with their patients, but the drawback is that it is very labor intensive. Prof. Tang reminded the students about Peabody's quote and urged them to follow-up a couple of patients during their next three months at SOTH doing their surgical clerkship. Dr. Hong encouraged the students to review the article, "Life Lessons", again. Later, the QEMS interns commented that the CHD was different from the medical ethics discussion they had at QATH. They found the CHD useful in allowing them to know what to do in similar situations later on and that the session with the social worker was like "opening a window" to reveal answers to their queries. They were particularly impressed by Wendy's detailed and professional analysis of the patient's family situation and mentioned that even if they had discussed with their classmates about the situation, they would not have come up with any solution because they did not have the expert knowledge or practical experience.

Battling Negativity and Pessimism

Another issue the CHD facilitators have to face is the negativity students have about medical practice and their future that they picked up from their seniors or teachers, particularly those interns from QEMS. This is a reflection of the pessimism physicians in Taiwan currently have about the profession. The phenomenon in QEMS students is not apparent in their clinical

practice but surfaces during the CHDs. From the discussion below, we shall see what the QEMS interns said about what they had been told by their teachers and how the SOTH doctors tried to convince them about what could be done. Dr. Hong was away that day and Dr. Fan, a family physician who was also one of the palliative care doctors at SOTH and a mentor, was invited to attend the session because the case involved a dying patient.

Claire reported about a sixty-five-year-old man who was initially admitted for workup on unsteady gait but eventually found to have multiple brain metastases and leptomeningeal seeding of unknown primary origin. The patient's two adult sons did not want the patient to be told of his condition, a practice that is very common in Taiwan when the diagnosis is an incurable condition such as cancer. Claire posed the question of whether they should follow the wishes of the family or if the patient had a right to know, even when the prognosis was not good — only about three months. Prof. Tang asked each student on the team to comment. Claire thought that it would depend on factors such as the patient's education level, his personality, e.g. optimistic or pessimistic, and family situation, such as issues about inheritance, etc. Carl said that he would consult the patient's family about their reasons first because they knew him better, but he was more inclined to let the patient know and he would be willing to act as a bridge to relay the patient's wishes to the family. Ivan, a QEMS intern, said that he would respect the family's wishes because at QATH, they were told that, "It is the family who decides and pays for the

treatment, and it's also the family who will sue you if the patient dies." Carrie felt that her responsibility was toward the patient first and foremost, and she would talk to the patient alone first to understand his real wishes. She explained about the need to separate the family from the patient because they tend to put on an act in front of each other, citing her former experience with a mother and daughter who did not know how to face the life-threatening disease in the daughter or each other's emotions. Irene, another QEMS intern, admitted frankly that she was concerned about potential legal problems later on so she would respect the family's wish. Dr. Fan told the students that she had been warned by her teachers about the dangers of lawsuits since her internship but she thought that her responsibility as a physician was to provide the most appropriate management for the patient, which sometimes might not be the best mode of treatment. However, it requires mutual trust between the doctor, the patient, and the family because medicine is full of uncertainties. She believed that the priority of a physician should be in order: first and foremost, the patient before the immediate family members, and finally the extended family. She cautioned about conflicts of interests between family members and told the students that they could recruit help from other colleagues, for example social workers, to understand the family dynamics and to call for a family meeting to explain the situation to the patient and family at the same time. She shared that the reason most family members do not want the patient to know about diseases such as cancer is that they are afraid that the patient will be

depressed or even commit suicide after knowing the diagnosis, but in actual fact, it is very difficult to hide the situation from the patient when his condition deteriorates. Furthermore, one is giving the patient false hopes. Dr. Fan cited a real case where the patient was lied to about his bladder cancer for ten years and he was very angry with his family after he found out shortly before his death. Dr. Fan told the students that they could express empathy and understanding to the family and then reason with them. It is also important to warn the family that the patient will naturally feel upset initially when told of his condition, but they can focus on recruiting the family to help the patient face the situation and be with him. She stressed the importance of letting the patient know the truth also because of the need to discuss whether or not to have invasive treatments. On the other hand, Dr. Fan also talked about the situation where a patient may not want to know his/her condition, especially in traditional elderly patients who rely on their husband or sons to decide for them the treatment options. She demonstrated how to probe the patient for his wish: "You've had many tests and exams recently. Do you want to know the results?" or "What did the doctor tell you about the results of the exams?"

Next, Prof. Tang shared his experience of being consulted about a sixty-year-old woman with colon cancer and multiple metastases who cried every day. She told Prof. Tang that she was uncomfortable and when the latter asked her why, she replied, "No one wants to tell me." Two of the woman's sons were present too, so Prof. Tang said, "It sounds like you want to know. How

much do you want to know? Do you want to know even if it's bad?" The patient replied in affirmative and said that she wanted to know because "I have many things to arrange and prepare." Prof. Tang told her, "That's very important. I'll discuss with everyone." Then he tried to find out about the patient's personality and background, her coping mechanisms, and to assess her risk of suicide by inquiring about her past history of depression or anxiety. He found that the patient was very capable and organized and had no risk factors for suicide. So he arranged a family meeting with the patient's four sons where he addressed their concerns and in the end, they agreed to let the patient know about her diagnosis. Prof. Tang then relayed the decision to the patient's attending physician who informed her of her condition. The patient cried for a while after hearing the diagnosis but after that, she requested to take leave from the hospital for a few hours where she returned home and arranged all her affairs: who should get her jewelry and other valuables, how her money should be divided, etc. Prof. Tang concluded that one needs to learn about truth-telling, i.e. informing patients of their condition, and if it is done well, health care workers can help patients and their family heal, and it would be a major accomplishment to the former. However, it requires the right timing and knowledge, and one can attend classes for the latter. Prof. Tang also explained about the financial aspect of the issue by citing the example of Japan, where it was also common practice not to tell patients the truth in the past, but during a

period of economic recession, the government mandated that patients be told of their true conditions and found that it resulted in decreased lengths of hospital stays.[7]

Prof. Tang then explained the SPIKES protocol for delivering bad news, which was thought up by an oncologist and a psychiatrist, and consists of: (1) setting up the interview, (2) assessing the patient's perception, (3) obtaining the patient's invitation, (4) giving knowledge and information to the patient, (5) addressing the patient's emotions with empathic response, (6) strategy and summary (Baile et al. 2010). Carrie admitted softly that they had learnt about SPIKES in their third year, were tested on it, but she could not recall what it stood for. Prof. Tang consoled her that it required practice. Carl thought that truth-telling was difficult to accomplish and cited his experience with a twenty-year-old man with seizures from a motor vehicle accident who had an over-protective mother. Dr. Fan thought that from the mother's point of view, her actions were understandable. She believed that the mother required time and empathy, and that her asking questions repeatedly showed that she was anxious and needed reassurance. Dr. Fan stressed that health professionals should not be afraid of witnessing the patients' negative emotions and that the students could show their care and concern by chatting with the patient and family to understand their past and factors behind their actions. She encouraged the students to learn how to be with patients and their families. Prof. Tang echoed

[7] Japan has a national health insurance program which is made up of the Employees' Health Insurance and the National Health Insurance systems.

the importance of providing "care" in addition to "cure" to patients and helping families to cope with the situation. Prof. Tang concluded the session by saying that the topic presented was quite difficult but he commended the students for bringing up very good viewpoints. He ended by sharing what happened to that patient of his. When he went to see her a couple of days before she died, the patient was in a semi-conscious state. However, when she heard his name, she extended her hand to him and thanked him. Prof. Tang's voice choked for a slight moment at that point. He concluded that the students would know that they had done the right thing when their patients thank them, and that to be of real help is one's greatest reward.

In another discussion about a rich and successful patient who would adjust his own diabetes medications, Irving, a QEMS intern, said that he preferred to let patients do what they wanted by quoting the philosophy of an ancient Chinese sage, Laozi, of non-action,[8] but Prof. Tang reminded the students that such patients would shop around for other doctors. Chelsea postulated that the patient might have done it either because he was not confident with certain doctors or because his expectations were not being met, so she would try to explain and persuade the patient to cooperate well with one physician he trust. The discussion then evolved around the patient's personality, such as attention to details and affinity to having control. Irving later mentioned that perhaps they could find out why the patient needed to have control so much and

[8] In Mandarin it is 無為, which is, to let things take their own course.

what he was most afraid of, e.g. death, so that the patient could focus on those issues. Upon hearing that, Prof. Tang commended Irving on his suggestions. He confessed that he was initially quite worried about Irving's attitude and was relieved that the latter was actually quite involved and concerned about the patient.

The physicians at SOTH face an uphill battle in their attempt to change the feelings of negativity and pessimism in their young disciples, who are influenced by their teachers and seniors at other hospitals. A REMS clerk told me that once when they returned to school for classes, the physician who was supposed to give them a class on general internal medicine spent the entire hour ranting about the deficiencies of the system and dangers of malpractice suits, making them very depressed and anxious about their future. I believe that those physicians who hold negative views about the profession are a very small minority but unfortunately, they are very vocal while the majority remains silent. That is why some of the physicians at SOTH have been rather active in speaking out against the tide, led by their President, Professor Peng. One of the mentors told me that he noticed the increasing pessimism in the medical students in recent years, so he began accepting invitations from various medical schools to talk to their students and voicing his thoughts by writing opinion pieces in the newspapers. Once during a CHD session, he told the students that he was very worried by their constant talk about their fear of medical litigations and he urged them to remove their coat of defensiveness. He encouraged

them to improve their communication with their patients and to win their trust so that the patients would dare ask questions and decrease misunderstandings. The SOTH physicians do not only advocate verbally, they also walk their talk. They had successfully persuaded the National Health Insurance to pay for certain treatments that proved to be effective.

Students' Perspective about the Clinical Humanities Discussions

Students generally found that the CHD allowed them a good opportunity to talk in-depth about certain topics not just amongst themselves but with teachers to guide them, since some of the issues do not have a right answer. Some thought that even though students might be more creative in their thinking, the senior physicians had more experience. They appreciated having senior physicians and other hospital staff to participate with their discussions because their expertise and experiences helped them with thinking and managing some of the issues. However, a student confided that she preferred to discuss about problems she had personally encountered in clinical practice with her mentor. Another clerk confessed that he seldom shared his opinion during CHD because he liked to listen to the ideas of others more. For the interns from QEMS, they found it a very good idea to have some time during their busy clinical training to discuss about certain problems they face, because with their own classmates they might not have time to sit down and talk. They found that at SOTH, the health care team paid more attention to the

psychosocial aspects of their patients, as compared to other hospitals. They also thought that some of the discussions taught them how to build up trust with patients and allowed them to see different perspectives or angles to an issue, including the patient's own opinion and feelings.

A year after I finished my fieldwork, Shirley, the secretary in-charge of clerkship training, conducted a survey through electronic mail with those clerks who had been at SOTH for the past two years about how they feel about the CHD through several open-ended questions. She was kind and generous enough to share her results with me, and most of the replies were similar to those I have found above. Many expressed their gratitude in having a forum for talking about their problems. However, a couple of students mentioned that during their surgical rotation, news about the famous American actress Angelina Jolie's decision to undergo preventive mastectomy for cancer was released and one of their surgeon teachers analyzed its pros and cons with them, so they thought that in addition to their own problems, it would be beneficial to them if they could also discuss contemporary medical issues. One mentioned that there were a few times when they thought they did not have any topics for the CHD but Prof. Tang was still able to talk about what seemed to be minor issues and held a good discussion.

Functions of the Clinical Humanities Discussions

A look at the topics discussed in the CHD through the years might provide an useful insight to the problems students encounter in their clinical practice. These may be loosely and broadly divided into those issues unique to novices in medicine because of their beginner status and those problems pertaining to general medical practice. In actuality, some situations in the two categories overlap. Problems relating to the beginner status include: how to introduce oneself to the patient, what to do if the patient refuses to talk to the student, if medical students could be "good friends" with their patients, how often and for how long one should see a patient, how much authority a student has in answering patients' questions about his/her disease or condition, how to respect the patient's privacy and dignity while conducting physical examinations, if it is appropriate to cry in front of patients, how to say goodbye to the patient when one leaves the team or when the patient is discharged or dies, etc. As can be seen, most of the problems arise from issues about one's position as a novice in medicine and its boundaries and limits of authority and responsibility. Other topics pertaining to the practice of medicine in general that have been brought up include: policy of apology when one makes a mistake, how to actively listen and communicate both verbally and non-verbally, what to do with "difficult" patients, how to deliver bad news, how to look for values and meanings of the patient's life and illness, what to do about patients' family and financial issues, how to arrange for home care after discharge, how

to overcome the sense of helplessness in caring for dying patients, how to face the death and dying of patients, etc.

Various scholars, including clinicians, have investigated the use of stories and narratives in assisting medical professionals with finding meaning to their work (see particularly Hunter 1991, and works by Dr. Rita Charon, e.g. Charon et al. 1995 and Charon 2008). Mezirow (2000; 2006) believes that talking about critical incidents and life histories are useful methods for self-reflection. My observation is that the CHD allows students to reflect on issues they encounter in practice, which deepen their experiences through talking and sounding off various options to come up with some solutions, to see various viewpoints of their peers and others so that they can appreciate the perspectives and stand in the shoes of others such as a difficult patient or family, and from the experiences of more senior staff from diverse fields, they can know how different health care professionals deal with a certain problem, e.g. social workers, home care nurse or palliative care doctor. I believe that the key is to allow students to find out the answers by themselves, so that they will more likely translate their newfound understanding into action.

The core facilitators, Prof. Tang and Dr. Hong, led the discussions well by allowing and even encouraging the participants to speak their minds freely. The drawback is that they did not allow enough time to let the students really discuss or even debate about the issues. Most of the time, they would ask each student to talk once, and after the round, summarize what had been

said and then provided their own suggestions. Only sometimes they might challenge a student's opinion to make the latter think deeper or ask questions for clarification. Despite the shortcoming, the message they often gave was one of hope and optimism: that regardless of the patients' conditions, the students could still care for and do something for them. I believe that the facilitators play an important role in making such discussions and reflection exercises successful. During my previous job promoting medical humanities education in Taiwan, I had attended similar discussions held at a few other teaching hospitals and found some physicians who, true to their profession in always having to dispense advice to patients, were anxious to give a lot of opinion during discussions and they ended up dominating the conversations. Needless to say, the students found the "monologues" boring, thus defeating the purpose of holding such discussions, which is to let students find out for themselves either through doing, thinking or talking about it.

Another factor vital to the success of these sessions is the selection and framing of the question or issue to be discussed. Despite the orientation given at the beginning, often, early in the clerkship, the students do not have a clear idea of the purpose of the CHD and will mistake it for another M&M (mortality and morbidity) or clinical ethics conference which in many hospitals often ends up as a finger-pointing and blame-placing activity. The task of clarifying the focus of discussion lies either in the person receiving the topics for discussion — in SOTH's situation it is Shirley, the secretary for clerkship training — or in the facilitators at the beginning

of each discussion. Even though these people have done a good job at SOTH, I find it a bit of a pity that the discussions were still about the "other" and not focused on the students themselves, for example, how they felt when they encountered a "difficult" patient such as the VIP who adjusted his own medications, or if they ever got angry when they were turned away by patients and how they dealt with the frustration, etc. I gained this understanding from my previous job, when initially, we had difficulty defining what medical humanities is and how it is different from medical ethics, which many often confuse it with. During one of our discussions, one of our co-principal investigators came up with the concept that medical humanities is about gaining "in-sight" to oneself and about others, i.e. looking within, thus differentiating it from medical ethics, which is about the relationship and interaction between two parties, often the health care workers and their patients in the medical setting.[9] This idea of introspection also embraces the potential of helping health care professionals care for and heal themselves in their jobs, as seen from the Humanistic-Medicine program developed by the Mount Sinai School of Medicine whereby students were made aware of their emotional and behavioral responses to various situations and patient types in order to develop coping strategies (Gorlin and Zucker 1983). However, from my experience teaching about reflection in students, I found that it is very tough to inspect oneself, because one has to face one's vices, shortcomings, and even one's ugly side. I

[9] I am grateful to Dr. Ling-Yu Yang of the National Yang Ming University and Taipei Veterans General Hospital for this concept.

have encountered students who explode in class, saying that one just needs to look forward and that there is no need to think and ruminate about what one has done. In-sight, it seems, is a very potent medicine, and is perhaps better taken in small doses. Kegan (2000) laments a common error adult educators commit by requiring students with socialized minds to be self-directed learners which overlooks the fact that what they are asking is for many of the students to change their entire way of understanding themselves and their world, which may mean giving up the basic foundations of their lives. This could be the reason behind the resistance we encounter in students when we introduce self-reflection. Therefore, reflection at a deeper level may be better introduced to those who have some prior training, for example in reflective writing first, as is done in one of the medical schools in Taiwan,[10] or the step-wise approach adopted by Mount Sinai School of Medicine (Gorlin and Zucker 1983).

Conclusion

The Clinical Humanities Discussion sessions represent a creative solution the mentors at SOTH adopted to teach the art of medicine at the clinical phase. It is learner-centered through discussions about real situations students encountered in practice. Through the facilitators'

[10] The Taipei Medical University has found that those students who had taken elective reflective writing courses during their premedical years are more motivated and active later during medical humanities discussions in their clinical years, and they have made the courses compulsory to all their first-year medical students since 2012.

sharing stories and others' examples, use of relevant theoretical frameworks and guidelines, and introducing further references, professional input from other staff, and consensus building, the novices are able to look at the situation from different perspectives, discover alternative and creative ways of handling the situations, and find moral support for right action. These are valuable to young physicians in addressing questions concerning how to care for one's patients and oneself, and how much care one should show (Konner 1987; B. and M. Good 1993; Sinclair 1997). Through the provision of a forum for discussing the "soft" aspects of medicine, I believe that the teachers at SOTH have fulfilled their ultimate objective and function as a teacher by not only inculcating the medical knowledge and skills but also imparting their attitudes and values to the students. They also conform to the ancient Chinese concept of the ideal teacher in the quote at the beginning of the chapter as one who not only transmit knowledge and skills, teaches the trade, but also help resolve doubts in their students.

Conclusion

一種米養百種人
One kind of rice feeds a hundred kinds of people
– Taiwanese saying

This dissertation research has investigated how a teaching hospital in Taiwan conducted its clinical education program for medical students. The ultimate goal of this study was to find out how to train and retain caring and competent doctors by focusing on good examples of clinical teaching supplemented by an understanding both of the nature of medical practice and clinical learning in Taiwan from the point of view of the novices and of what hospital administrators can do to facilitate learning. As with a complete study of a patient, we need to examine various angles and perspectives and zoom in and out to see the different levels of factors at play. I organized the three sections of this study according to the actors involved – the students, the teachers, and the hospital (administration) – and ascertained the experiences of the young apprentices, good methods of clinical teaching, and methods of creating a conducive setting for teaching and learning. I examined the "deliberate, systematic, and sustained effort" exerted by each party in learning and teaching, and found that for the novices, it did not really matter when they were told something because they required frequent reminders. They did not always accept

what they were taught, thus confirming the shifting nature of the effort. Readers might recall the student who was "out of touch with reality" and had to be coached by the secretary about what to do. More importantly, my examination of the nature of clinical practice and the skills novices require revealed that many of the competencies are not taught at medical schools in Taiwan.

With regard to the teachers, this study supports and augments current literature about the characteristics of expert teachers (Mattern, Weinholtz, and Friedman 1983; Putnam 1987; Wilson, L. Shulman, and Richert 1987; Borko and Livingston 1989; Sabers, Cushing, and Berliner 1991; Irby 1992) and has found that although most physicians made a sustained effort to educate, the more successful ones acknowledged the co-participatory role of their pupils and engaged them in the act of learning. Readers should recall the teaching style of Dr. Guan, the gastroenterologist who could hold the attention of his audience through various means, and Dr. Song, the surgeon who used repetitions and formulas to aid the retention of knowledge. The discursive nature of education also clarifies why some of these teachers learned from their students and were also changed in the process. A notable example is Dr. Han, the hematologist who became more relaxed and humorous during his second round of teaching and who learned about the different personalities of his students and adjusted his method of instructing each of them accordingly. Another example is Prof. Nian, the neurologist who accepted and applied the use of digital technology in his teachings and who solicited feedback about his pupils' reactions

to his efforts. All of them made teaching and learning visible. The understanding of the hospital's teaching staff concerning the shifting nature of the educational process allowed them better to accommodate the needs of different groups of students by varying the content of their orientations and classes according to the amount of clinical experience and the number of rotations the students had already carried. In my view, it is also this understanding that explains why the teachers at SOTH were more tolerant of and flexible with those students who did not accept what they had been told or taught, as compared with their counterparts in the rest of the country where the teacher-student relationship is still very hierarchical.

As I zoomed out to see the bigger picture, I adopted Lave and Wenger's (1991) framework in order to examine how legitimate peripheral participation is carried out within the communities of practice in the teaching teams and the hospital. I argued that the hospital has successfully established a community of practice among its staff, including workers in the laundry room who view the students as "future stars", its volunteers who assist visitors and help maintain the cleanliness of the hospital, and its health personnel who often debate with one another, constantly reflect on what they are doing, and seek others' perspectives. SOTH's standard of health care and teaching sets a fine example within the medical profession in Taiwan for the possibility of overcoming the structural constraints of the macro environment even though this

requires commitment, dedication, and willingness to invest in resources such as human personnel, facilities, equipment, and time.

Focusing on the techniques the teachers used to engage learners in active participation, we saw that Dr. Song, the surgeon, recruited patients and the operating room staff to also be teachers to the newcomers and assigned tasks of different levels of difficulty to his resident and students. He involved his disciples in his work and broke down the tasks into smaller and more manageable parts in order to allow the students to participate or perform in some of them. He would warn a student about his impending assignment so that the student would pay attention and be prepared, and while the students carried out the task, he would supervise, demonstrate, guide, and correct them. In the medical teams, there were also varying degrees of participation in the form of the number, depth, and extent of patient care. Furthermore, the students themselves engaged in legitimate peripheral participation with those who had more knowledge and experience in a certain subject teaching the relative newcomers. Yet, the situated and contextual nature of learning is also highlighted in those students whose performance varied according to the level of strictness of their teachers.

In the Clinical Humanities Discussions, besides the stories, quotes, solutions, and strategies the teachers shared with their students about how to overcome some of the problems and issues in their clinical practice, we see that a valuable quality in these teachers which makes them more

open to change and to others' different thinking is their capacity for self-reflection and the important contribution to the discussions of critical reflection. This is a topic worth further investigation but involves examining the learning that goes on within the individual. However, from the students' perspective, the discussions are valuable in helping them find creative solutions to some of the issues and problems they encounter in clinical practice, fight pessimism and negativity, and maintain a healthy balance of care towards one's patients and oneself. They may be the key to retaining good physicians and preventing burnout (Konner 1987).

When we recall what the president, Prof. Peng, told students during his welcome remarks to them about the keys to medical education, namely, the selection of the right students, provision of a good learning environment, mentorship or role modeling, and knowing oneself in order to make the right choice of specialty later on, we see that the hospital has done well in terms of the second and third items, and somewhat fulfilled the fourth aim through its Clinical Humanities Discussions. However, concerning the first point about student selection, the mentors often puzzled over the qualities of students they should recruit and how to seek them out. This is another subject that requires deeper inquiry. Nevertheless, the issues Prof. Peng raised about medical education also answer my central question concerning how to train and retain caring and competent physicians, and furthermore, SOTH has demonstrated that it is also possible to be happy about one's profession.

In summary, this study attempts to provide a description of the clinical learning experiences of medical students in Taiwan and to propose what hospitals and teachers can do educate these students better. As the saying inscribed at the beginning of this chapter goes, it takes all sorts to make a world, so there are many types of students. Therefore, educators should be open and flexible enough to cater to the different personalities and ways of learning of the students. However, most importantly, they should teach the learners to become teachers themselves (Hattie 2008).

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