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## **VIETNAMESES MEDICAL EDUCATION AND DEVELOPMENT OF FAMILY MEDICINE IN VIETNAM**



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## I. Demographics and Health Profile of Vietnam:

The Socialist Republic of Vietnam was formed by the reunion of South and North Vietnam in 1975 after 10 years of war. Since then the country has been led by a single party, the Communist Party, which has impacted all areas of the economy, including the health care system. After following a socialist economy system for 11 years, the government announced a policy of “change and newness” (called Doi Moi) in 1986 to implement a market economy system. Although the overall health system of Vietnam has improved gradually since 1986, increasing inequalities have developed between urban and rural populations, rich and poor people, and various ethnic groups. The Vietnam health system has become more diverse, varying from medical centers with sophisticated technology in big cities such as Hochiminh or Hanoi to the relatively primitive low tech commune centers in rural areas. As a result disparities, child and maternal mortality remains higher in poor and rural area, as well as among some ethnic groups. Malnutrition remains a serious problem in Vietnam with children malnutrition at 21.2%<sup>1</sup>.

With a population of 85 million and 56 ethnic groups comprising the 13<sup>th</sup> most populous country in the world, Vietnam faces challenges in keeping the health system current. The leading cause of death in Vietnam, interestingly, is road accident, with an estimate of 12,000 deaths every year and hundreds of thousands becoming disability. The country also faces other emerging health problems including HIV/AIDS, tobacco-related diseases, cancer, diabetes, and heart disease, many as a result of an economy that is growing rapidly—8.2% in 2006, the second highest growth rate in Asia. Many communicable diseases such as TB and malarias still are major health concerns. Below are some statistics about Vietnam<sup>2,3</sup>.



### **Vietnam Facts in 2004**

*Population: 85 million*

*Life expectancy at birth: 69M/74F*

*Healthy life expectancy: 60M/63F*

*Probability of dying under five (per 1 000 live births): 19*

*Crude death rate: 17.50*

*Probability of dying between 15 and 60 years: 195M/119F per 1000*

*Total annual expenditure on health per capita: 30 USD*

*Number of physicians: 47,587 or 5.88/10,000 population*

*Number of nurses: 48,157 or 5.95/10,000 population*

*Yearly graduated physicians: 4000*

*Ethnicities: 56 (89% Kinh)*

*Common diseases: Pneumonia, HIV/SIDA, stroke, MI, TB, acute bronchitis, diarrhea, GI, cataract and lenses problems*

Figure 1 show a hospital in Hochiminh City, Vietnam

Ten leading causes of mortality	Number	Rate per 100 000 population
1. Intracranial injuries	2327	2.88
2. Pneumonia	1374	1.70
3. HIV	1260	1.56
4. Transport accident	1230	1.52
5. Intracerebral hemorrhage	1181	1.46
6. Stroke, not specified as hemorrhage	922	1.14
7. Heart failure	779	0.96
8. Acute myocardial infarct	733	0.91
9. Respiratory tuberculosis	723	0.89
10. Septicemia	638	0.79

*Table 1 showed leading causes death in Vietnam in 2003<sup>3</sup>*

There is a huge hospital shortage in Vietnam. Despite efforts to build more hospitals, most major hospitals in Vietnam are heavily used. For example, Cho Ray Hospital in Hochiminh City is designed for 1200 beds but usually houses more than 2000 patients. As a result, many patients do not receive enough attention from physician/nursing staff, and the hospital staff usually has to work overtime. Recently, private hospitals were allowed to open to reduce the shortage but it is still hard to improve the crisis of healthcare in Vietnam. In 2007, there were about 66 private hospitals and 45,000 private clinics in Vietnam<sup>4</sup>, most of them are located in major cities such as Hochiminh or Hanoi. The number of private hospital is expected to increase in 2008 with permission granted to build 22 more<sup>5</sup>. Most private hospitals do not have affiliations with medical schools. The overflowing hospitals have a strong impact on training physicians in Vietnam since physicians often do not have sufficient time for patients and medical students.

## **II. Vietnam Healthcare System**

The Vietnam government is controlled by the Communist party. The medical schools in Vietnam are overseen by both the Department of Health and Department of Education. The chart below shows the relationship between medical schools and government. All medical schools in Vietnam are public with funding from the government. A recent proposal for establishing a private medical school in 2007 from the Vietnamese Association of Private Medical Practice has not yet been approved. Due to influence of the political system, every medical school has a Communist party committee. Usually, the dean or head of the department are appointed from the Communist committee, which may impact the quality of education and research since political priorities may take precedent over professional knowledge. In the curriculum, medical students are taught Marx's philosophy (during the first few years), Hochiminh's philosophy as well as the history of the Communist Party (during the last two years).

Currently, most medical services in Vietnam are paid by cash despite a national health insurance program called "Bao Hiem Y Te", which has two main types of healthcare insurance: obligatory and voluntary. Obligatory insurance is for people who are currently

working. The fee is paid by the employer and employee. Voluntary insurance is for those not belonging to the obligatory section such as students or pupils<sup>6</sup>. Everyone is encouraged to participate in these plans. Children under 6 years old have free medical insurance.

In reality, patients who pay cash usually will get more attention and better care. Those who have insurance usually receive low quality of care since the reimbursement of medical insurance is low and involved with much paperwork. In some places, the doctors do not even look at the patient if they do not have cash. This has created a dangerous “rule” in the hospital, the rule of “up-front cash or envelope”. This rule also impacts the quality of care. The richer will be treated better while the poorer will likely have inferior treatment.

The physician’s salary in Vietnam remains low compared to other professions. On average, Vietnamese physician makes 150-200 USD a month. The examination fee for a general checkup at Binh Dan Hospital, Hochiminh City in June 2007 was 15,000 VND (About 0.99 USD). The physician will receive part of this fee. Therefore, many open private clinics outside the public hospitals in order to increase their standard of living as salaries from public hospitals are usually insufficient. In a private clinic, examination fee varies from 50,000 VND (3.2 USD) to 200,000 VND (12.5 USD). However, physicians have to work in a short amount of time between lunch (from 12PM to 2 PM) or in the evening 5PM to 8PM. Due to this factor, patient is seen in a very short amount of time, usually 2-3 minutes. A private physician often sees over 100 patients per day.

As mentioned earlier, there are 45,000 private clinics in 2007. This number grew from 29,630 in 2001. The chart below shows the distribution of professionals in private sectors<sup>7</sup>. Traditional medicine includes those who did not have formal training in medical school but have had hands-on experience or inherit their medical practice from family. There are no clear distinctions between completely private practice and commune health center/hospital staff. Most physicians are in both sectors. They are working in hospitals or commune centers during working hours and in private practice after hours.

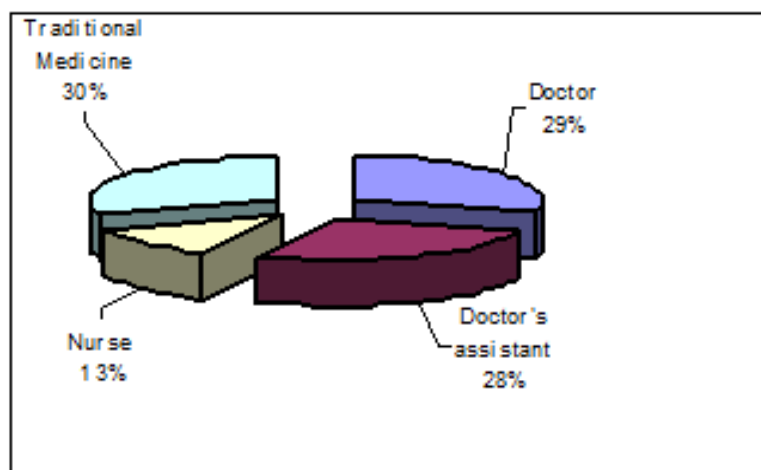


Figure 2. Distribution of healthcare professionals in private sector in Vietnam 2001<sup>7</sup>

The healthcare facilities in Vietnam can be divided into 3 groups: first level hospitals, mid and low level hospital, and commune medical center. In most cases, patients want to be transferred to first level hospitals because they think they will be treated better. Consequently, all higher level hospitals are overworked.

### Number of Hospital

Health infrastructures	Number	Number of Beds
<b>Public Health Facilities</b>	13 102	184 440
-General Hospital	717 (excludes district hospital)	91 366
-Specialized Hospital	101	20 580
-District	908	9 203
-Primary Health Center	11 161	45 995
<b>Private Hospital*</b>	66	N/A
Private Clinics*	45 000	

*Table 2 showed number of hospitals and other medical center in Vietnam in 2004 with (\*) indicated 2007 data.*

On average, a Vietnamese spends about 30 USD per year for health cost<sup>2,3</sup>. Due to the considerable disparity in the availability of health resources, many people do not spend money on healthcare, including those from rural areas. The need for family physicians in rural area, therefore, is even greater. Unfortunately many chronic diseases in rural areas, such as heart disease and cancer, are diagnosed at an advanced stage where treatment options are limited.. This is also true with other ethnic groups in Vietnam such as Hmong or Khome.

The Vietnamese government recognized the important of primary care since 1950s by establishing a network of commune medical centers. It is estimated that there are about 11 000 community medical centers in Vietnam<sup>8</sup>. As recently as 20 years ago, only 15% of commune medical centers have doctors with the remaining 85% composed of midwives, nurses, or traditional practitioners. While the number of physicians recently rose to 40%, many midwives, nurses, physician assistants function like physicians in these centers. The physicians in commune medical centers are all general doctors who graduated directly from medical school. They have not had postgraduate training and there is no required continued medical education.

### III. Vietnam Medical Education System

#### 1. Medical Education

There are 11 medical schools in Vietnam, mostly in big cities. Most have university hospitals. There are no private medical schools. There are two ways to become a doctor in Vietnam. The first pathway is when a student goes to medical school directly after high school, usually at age 18. In this pathway the student graduates 6 years after entering medical school. Getting into medical school in Vietnam is very competitive. For instance, 10,500 applicants competed for 800 seats at Ha Noi Medical University in 2007. The second pathway is for a student to go to a physician assistant program (called “y si”) for 3 year, working for a while and then coming back to medical school for 4 more years. The

second pathway is less popular in Vietnam as the quality of training is controversial. For the first pathway, a student enters medical school directly from high school after taking the entrance test in biology, chemistry, and math. For the second pathway, a student may take a similar exam although acceptance into medical school is competitive.

	<b>Medical School</b>	<b>Location</b>	<b>Number in entering class</b>
1	Ha Noi Medical University	Ha Noi	800
2	Thai Nguyen University	Thai Nguyen	200*
3	Hai Phong Medical School	Hai Phong	500
4	Thai Binh Medical School	Thai Binh	500
5	Hue Medical College	Hue	380
6	Tay Nguyen Medical College	Dak Lak	200*
7	Can Tho Medical School	Can Tho	420
8	Pham Ngoc Thanh Medical School	Hochiminh City	320
9	Hochiminh City University of Medicine and Pharmacy	Hochiminh City	550
10	Military Medical Institute	Ha Noi	200*
11	Da Nang University	Da Nang	100 **
			<b>Total 4170</b>

*Table 3 showed number of medical schools in Vietnam and number of yearly entering class. \* is estimated number, no available data. \*\* Degree conferred by Hochiminh City University of Medicine and Pharmacy, class started in August 2008.*

The medical school curriculum in Vietnam lasts 6 years and it is divided in 3 parts: basic science (1 year), preclinical (1.5 year) and clinical (3.5 year). Students started seeing patients during clinical years. Below is the curriculum at Hanoi Medical University in Hanoi, Vietnam<sup>9</sup>

**Year 1:** Advanced math, biology, foreign language, physics, chemistry, anatomy, computer science, and philosophy.

**Year 2:** Biochemistry, histology, environmental science and health, foreign language, nutrition and safety food, basic nursing, physiology, microbiology, epidemiology, basic internal medicine, basic surgery.

**Year 3:** Pathology, pathophysiology, foreign language, surgery in practice, psychology, bacteriology, basic internal medicine, basic surgery, pharmacology, health education.

**Year 4:** Radiology, statistics, internal medicine pathophysiology, surgery pathophysiology, radiation medicine, sport medicine, genetics, obstetric, pediatrics.

**Year 5:** military medicine, health organization, epidemiology, traditional medicine, rehabilitation, infectious disease, tuberculosis, psychiatry, allergy, dermatology, neurology, ophthalmology, tooth-mandible-face, forensics medicine

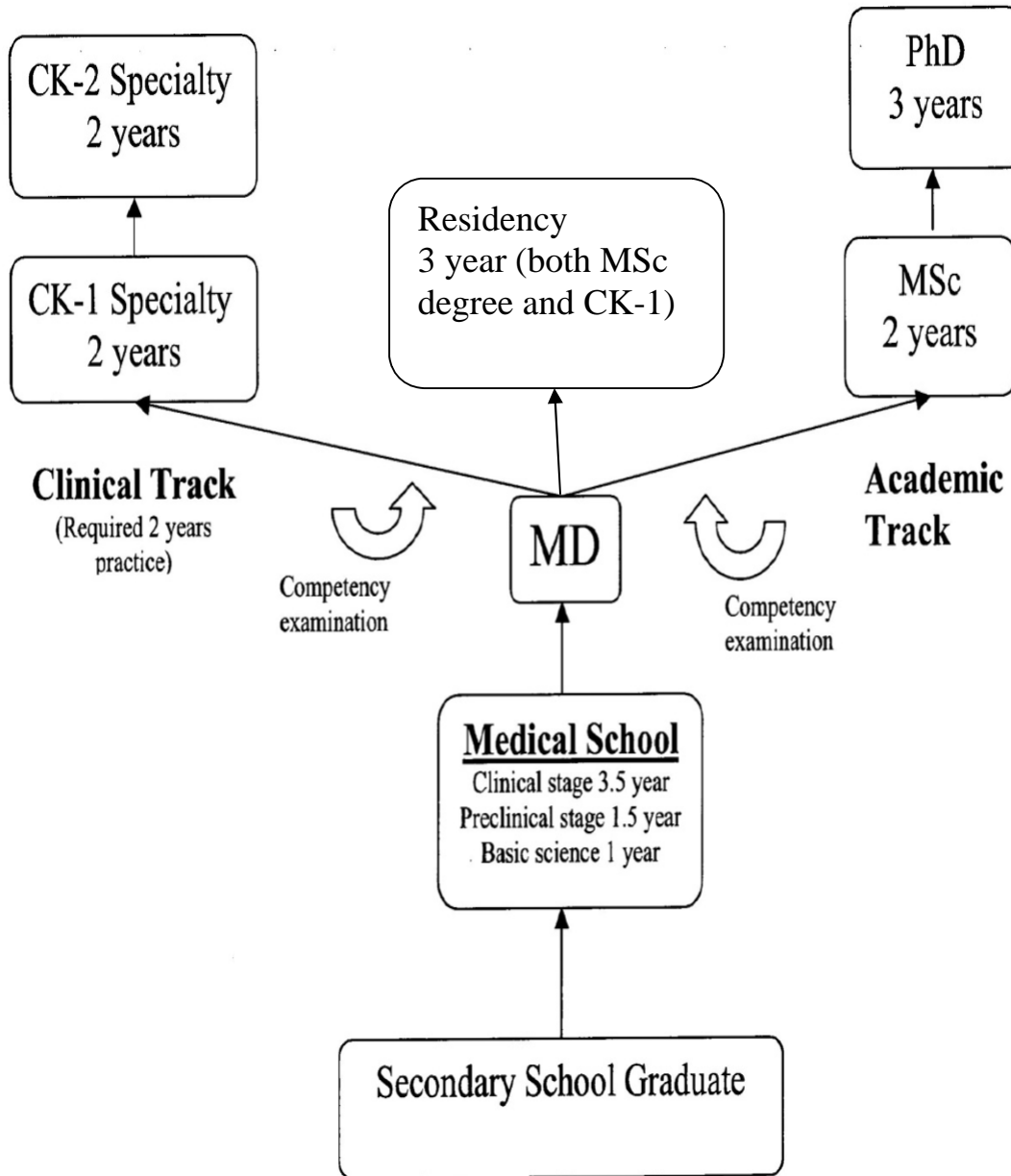
**Year 6:** Obstetrics pathophysiology, pediatrics pathophysiology, internal medicine pathophysiology, surgery.

This medical curriculum in Vietnam serves to train general doctors who can treat a wide variety of patients. There are no core rotations (compared to the US medical curriculum) and no electives. Everyone's training is the same regardless what specialty they will practice later. The current medical curriculum in Vietnam is similar to the French curriculum. Interestingly, the medical school curriculum in Vietnam before 1975 was similar to the US system with 7 years (BA/MD) in training. There are suggestions to change the curriculum but these are not yet approved by the government.

## **2. Postgraduate Training**

There are 3 ways to pursue postgraduate training in Vietnam: academic track, clinical track, and residency track. The academic track is governed by the Ministry of Education; clinical track is governed by the Ministry of Health; and the residency track is a collaboration of both. The academic track is for those who will teach at institutions. In this track, medical graduates pursue a Master (two years) or PhD degree (two years after Master). The curriculum for the Master and PhD degrees are less concentrated on clinical practice but more on research. For example, one will spend one year in clinical setting and another year for Master thesis. In the clinical track, medical graduates will study an additional two years in their chosen specialty, which is called CK1 (chuyen khoa 1 – specialty). CK2 (Chuyen khoa 2- subspecialty) requires another two years after CK1. In the residency track, graduates will spend three years in residency training (similar to a US residency) and graduates will do both clinical and research work. This pathway is considered the most competitive and is the most highly regarded in the medical system in Vietnam. CK1 is considered equivalent to a Master degree and CK2 is equivalent to a PhD degree.

Admissions to these three pathways are similar. Candidates take entrance exams in English, math, and the specialty of their choice (for example, physiology for internal medicine or surgery for surgery postgraduate training). Admission includes an interview, oral exams and a written exam. However, only the top 10-15% graduates after medical school have the opportunity to pursue residency track. To be eligible to sit for the entrance exam of this track, graduates should not have any failures in any classes during medical school and an average GPA above 7.0 (on a scale which has a maximum of 10). The academic track is easier to get into and those who cannot get into residency can apply for both academic and clinical tracks. Still, due to limited number of spots in postgraduate training in all 3 pathways, 60% of medical graduates will not go to postgraduate training and instead become general doctors. Many of them engage in self study and attend short conferences to become specialists without formal training.



*Table 4 summarized pathway of postgraduate medical education in Vietnam.*

#### **IV. Development of Family Medicine in Vietnam**

In 1978 the WHO recognized the role of primary care of doctor in improving health care quality. It is estimated that a 20% increase in primary care physicians will decrease a mortality rate in that region by 5 %, especially if there is an increase in family medicine doctors. One more family physician per 10,000 will have 70 fewer deaths per 100,000 (or 9% decrease). Family physicians also help reduce the number of infant mortality and low-birth-weight infants<sup>8</sup>.

The people in Vietnam vary from the very rich to the very poor. As 75% of the population still lives in rural areas where resources for medical care is still secondary to

those needed for a subsistence existence. Vietnam needs a number of doctors that can provide cost-effective medical care. The government has gradually recognized the benefits of family physicians, especially when they can integrate family physicians into the network of commune medical centers.



*Figure 3 showed a commune medical center in North VN, courtesy of Dr. Dinh*

In 1995, the Ministry of Health initiated an outline for the development of a primary care system in Vietnam. They asked for consultation from international groups to form a family medicine specialty in Vietnam. In 2001, the Ministry of Health officially announced family medicine as a first degree specialty (CK1) in Vietnam. In 2001, family medicine departments were founded in 3 medical schools, Ha Noi Medical University, University of Medicine and Pharmacy in Hochiminh, and Thai Nguyen Medial School. In 2004, the first class of residents with a specialty in family medicine graduated from Hanoi Medical University. Recently, Can Tho Medical School became the 4<sup>th</sup> medical school in Vietnam offering a family medicine training program.

Outline of Standard Curriculum for Family Medicine  
First-degree Specialty in Vietnam, Curriculum Hours  
Allocated in 2-year Curriculum, Indicating Division  
of Theoretical and Clinical Time, 2007

<i>Subject</i>	<i>% of Total Time</i>	<i>Theoretical Study (Hours)</i>	<i>Clinical Work (Hours)</i>
Philosophy	6	6	0
Informatics	4	2	2
English	10	10	0
Biostatistics	3	2	1
Intensive care	7	3	4
Internal medicine	9	4	5
Surgery	9	4	5
Pediatrics	9	4	5
OB-GYN	9	4	5
Surgical subspecialty	9	4	5
Common ambulatory problems	4	3	1
Community medicine	4	3	1
Behavioral medicine	3	2	1
Examination review	14		

*Table 5 showed current Family Medicine curriculum training in Vietnam<sup>12</sup>.*

Currently, there are 4 training programs for family medicine. They have a similar entrance exam as other medical specialties. The curriculum in family medicine in Vietnam is 2 years included training in outpatient and commune medical centers. There are about 120 family physicians who graduate every year. The Ministry of Health plans to establish family medicine departments in all medical schools by 2011 and have physicians in commune center to train in FM by 2020<sup>8</sup>

<b>Training Site</b>	<b>Locations</b>	<b>Number of spots</b>
Can Tho Medical School	Can Tho	30
Ha Noi Medical School	Ha Noi	30
Thai Nguyen Medical School	Thai Nguyen	30
Hochiminh University of Pharmacy and Medicine	Hochinhminh City	30

There are several collaborative projects in family medicine between VN and US medical schools. These projects, including one from Boston University, have strongly influenced the development of family medicine in VN since many family medicine faculty and instructors in VN have been trained in these United States universities. There are

typically 3 month to 1 year fellowships for Vietnamese faculty and instructors. After finished training, they will come back to VN and teach family medicine.

## **V. Challenges**

There are many challenges for family medicine training in Vietnam. One of them is the lack of a family medicine core rotation in medical school. Students do not have the opportunity to learn about family medicine until they start postgraduate training. Secondly, since most clinical training during medical school is hospital-based, students have little or no experience in ambulatory care settings or outpatient clinics where much of Family Medicine is practiced.

Family Medicine is still considered a new medical specialty in Vietnam in both the general population and the medical community. However, the general perception of the Vietnamese population is slowly changing. Traditionally, whenever patients have problems, they go directly to the doctors that can treat their illness. Prevention and regular check ups are still new concepts in Vietnamese. Recently, a young famous Vietnamese artist suddenly passed away, probably due to heart disease, a death could have been prevented if he had a family doctor<sup>14</sup>. Today, many young Vietnamese are working harder and care less about their health. Many Vietnamese are not aware of the role of the family physician in medical care, which can make it difficult for family physicians to attract patients.

Because physicians in Vietnam work mostly in independent offices, they do not usually refer patients to others. As in the absence of an effective physician referral system in Vietnam, the limited medical networking reduces the effectiveness of family medicine, a specialty in which networking and collaboration between family physicians and other specialists are emphasized. Attracting and retaining graduates for rural area physicians is another challenge as the number of general doctors is still quite low in rural area. The current limited number of training spots in family medicine is another issue. With 120 graduates in the specialty of family medicine every year, there is not nearly enough for 85 million people.

While programs in family medicine have started they still lack funding and support from the government. In 2008, only 4 out of 11 medical schools have family medicine department. Continuing medical education for family medicine physicians in Vietnam also is another challenge. Currently, there are no requirements for continued medical education in Vietnam in any specialty, not just FM. With a rapidly evolving medical system, family physicians in VN will need continued training. Furthermore, most Vietnamese faculty and instructors in family medicine do not have formal training in family medicine. These individuals spent 3 months to one year fellowship in the US for family medicine training and they came back to Vietnam to train others, whereas family medicine residency programs in the US last for 3 years. It may be better for Vietnam faculty to obtain full-time training in family medicine as residents in the US.

## **VI. Future Trends of Family Medicine in Vietnam**

With a production rate of 4100 physicians per year, Vietnam still faces the shortage of doctors. Many doctors after finishing medical school do not want to go back to rural areas and try to stay in big cities such as Hochiminh or Hanoi. They often become unemployed while the needs of doctors remain great in rural and underserved areas. The majority of these graduates will not become subspecialists. They are great candidates to receive training in the specialty of family medicine if there are enough training programs.

The Ministry of Health planned to have family medicine departments in all medical schools by 2010<sup>8</sup>, which will increase family medicine residency spots by 2010. Continued medical education in family medicine is expected to be implemented in the near future. As Vietnam keeps growing its economy, the medical system will evolve and people will need more family physicians. With the ongoing development of family medicine in Vietnam, there are increased opportunities for collaboration between medical schools in Vietnam and other countries. The United States, with its long tradition of excellent training in family medicine, will be a great resource for Vietnam.

The family physician is gradually being welcomed by the public in Vietnam. Newspapers have begun introducing family medicine to their readers. Several clinics have started offering family medicine service<sup>10</sup>. As family medicine proves its effectiveness and cost saving, it will become more in high demand for Vietnamese. As a Vietnamese slang says "Prevention is better than treatment". This is true for the case of family medicine, where prevention and early treatment are emphasized.

The growth of family medicine in Vietnam can also help reducing overwork at major hospitals, thus, increasing quality of care. It has been shown that 50% of patients can be treated at commune medical centers of lower level hospitals. Children Hospital No1 in Hochiminh showed in one study that 90% of pediatrics patients can be treated in lower level hospitals<sup>11</sup>. The problem is the general public in Vietnam does not believe in quality of treatment in commune centers<sup>13</sup>. Family doctors, who can treat multiple diseases, can bring down this perception by their broad skills and knowledge. The patient will not need to transfer to higher levels of care if not really needed.

## **VII. Suggestion and Conclusion**

The Vietnamese medical education system needs to improve in general. For example, a new curriculum should be considered. Having core and elective rotations will offer more choices for the student and can guide their interests of specialty. Especially, a core rotation in family medicine is needed. Subject such as epidemiology and genetics should be put before family medicine rotation. Continued medical education is needed in Vietnam as the medical science evolves rapidly.

The family medicine program in Vietnam is growing and will help to improve the quality of care. Vietnam should maintain its growth via continued monitoring, supporting, and collaboration with family medicine physicians from other countries. The United States, with nearly forty years experience with family medicine residency programs, may contribute a bigger role in helping family medicine development in Vietnam.

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