厚生労働科学研究費補助金
地域医療基盤開発推進研究事業

「医師国家試験に係る日本語診療能力調査に関する研究」

平成 23 年度　総括研究報告書

研究代表者　　奈良　信雄

平成 24 年 3 月

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研究代表者　奈良　信雄（東京医科歯科大学　教授）

研究要旨

外国において医科大学（医学部）を卒業した者、又は医師免許を取得した者（以下、「外国医師」という。）が日本で医師国家試験を受験するためには、医師法の規定に基づき、厚生労働大臣の認定が必要とされており、こうした外国医師は近年増加傾向にある。

国民の安全・安心を確保するためには、外国で医学を修めた医師が、患者および家族、あるいは他の診療スタッフとの間で、正確で適切な日本語による意思疎通が可能であるかどうかを担保しておく必要がある。このため、従前より、医師国家試験の受験を希望する外国医師に対して日本語診療能力調査を実施し、その結果が一定の水準に達していることが、医師国家試験の受験資格認定の要件となっている。

本研究では、外国医師に対して日本語を駆使して診療できる能力をより的確に評価できるシステムの開発を検討した。まず診療能力を適正に評価できるシナリオを作成した、そのシナリオに基づき、日本語能力調査委員が受験生役、模擬患者役及び評価者役のロールプレイを演じるワークショップを開催し、シナリオの適正度、模擬患者役の演技、及び評価法を検討し、標準化を図った。ワークショップの成果を基に平成23年10月29日、30日に厚生労働省内で日本語診療能力調査を47名（1名は欠席）の被調査者に実施した。調査では評価者が評価すると同時にビデオ撮影を行い、11月4日の合否判定会議でより公正な判定を行った。

本研究で検討した成果は平成23年度の日本語診療能力調査のあり方を改善するのに有用であり、さらに次年度以降の日本語診療能力調査にも応用していく予定にしている。また、外国医師を対象にした日本語診療能力調査をより発展させ、日本の医学部を卒業した者に対する臨床技能評価にも適応できるようなシステムの構築に貢献することが期待される。

【研究組織】

研究分担者

鈴木利哉（新潟大学医学部准教授）

研究協力者

高木　康（昭和大学医学部教授）
志村俊郎（日本医科大学教授）
守屋利佳（北里大学医学部准教授）
齋藤宣彦（日本歯科大学教授）
野上康子（教育測定研究所研究開発部研究員）

A. 研究目的

近年の医療の国際化等に伴い、わが国で医師として働くことを希望する外国医師が急増している。そのため、日本語診療能力調査の受験者も増加しており、同調査の一層の質的充実を図りながら多人数を評価することができる手法の確立が急務となっている。

外国医師が日本において円滑な医療を行う能力を有しているか否かを評価することは社会的に重要な課題である。医療を行うに当たっては、医療知識・技能が一定の水準に達していること

はもちろんであるが、患者および家族や他医療従事者と円滑にコミュニケーションをとれることが大原則となる。そのためには、日本語を母国語としない、あるいは日本で医療を実践するのに必要な日本語能力（リスニング、スピーキング、ライティングのすべて）を有していない可能性がある外国医師に対しては、診療上のコミュニケーションに必要な日本語能力を適正に評価することが重要になる。

たとえば、アメリカでは医師国家試験(USMLE)において英語能力評価試験を課しており、フランス語圏のカナダ国ケベック州でもフランス語あるいは英語能力評価試験が課されている。

わが国でも従来、外国医師に対する知識及び技能の評価は医師国家試験として実施されており、また、医師国家試験受験資格認定に際して日本語診療能力調査が実施されてきた。しかし、日本語診療能力を適正に評価するための確立した評価手法や、評価基準が未だ十分には定まっていない。

本研究では、日本語診療能力を適正に評価できる手法をまず開発し、それに基づいて評価者を対象にしたワークショップを開催して検証し、応用することとした。その上で、適切な日本語診療能力評価手法を確立させ、日本語診療能力調査を実施する際の技術的支援を行うこととした。

適正な評価システムが構築されて応用されれば、わが国の医学部を卒業した医師だけでなく外国医師が参加することによって国民に対して良質の医療を提供し続けることが可能になり、厚生行政に果たす役割は大きいと考えられる。

B. 研究方法

1. 日本語診療能力の評価手法の開発

研究代表者、分担者に加え、研究協力者の支援を仰いで、外国医師を対象にした日本語能力評価手法の開発を行う。その目的には、アメリカ、カナダなどの研究者らと連絡をとり、適正に日本語能力を評価できるシナリオを作成し、評価項目、評価基準を作成する。

2. 日本語診療能力の評価者に対するワークショップの開催

評価法を作成した後は、外国医師の日本語診療能力評価者を対象にしたワークショップを開催し、評価手法のブラッシュアップを図るとともに、評価者の評価に関するトレーニングを行う。

3. 日本語診療能力調査の実施支援

医師国家試験の受験を希望する外国医師を対象にした日本語診療能力調査を実施するにあたり、技術的支援を行う。

4. 日本語診療能力調査結果の分析

日本語診療能力調査を実施した後は、結果を解析し、適正度をさらにブラッシュアップするとともに、その結果を次年度以降の日本語診療能力調査の実施に活用できるようにする。

5.「日本語診療能力評価の手引き」（仮称）の作成＜評価者向け＞

日本語診療能力評価手法が確立すれば、「手引き」を作成し、評価者の標準化を図る。

6.「医師国家試験受験資格認定及び日本語診療能力調査に係るパンフレット」（仮称、和英対訳）の作成＜外国医師向け＞

日本での診療を希望する外国医師が参照できるよう、医師国家試験受験資格認定及び日本語診療能力調査に係るパンフレットを作成し、周知の向上を図る。

（倫理面への配慮）

日本語診療能力の評価方法の開発と応用を研究するもので、研究対象者に倫理面での問題はない。ただし、外国医師の日本語能力を評価するという観点から、外国医師の不合理な排除につながらないような配慮を行う。

C. 研究結果

本研究では、外国医師に対して日本語を駆使して診療できる能力をより的確に評価できるシステムの開発を検討した。合計6回の委員会を開催し、資料を持ち寄っては日本語診療能力を適正に評価する方法の検討を行った。

外国医師が日本語を駆使して診療行為が円滑にできるには、「聴く能力」、「話す能力」、「書く能力」、「診察する能力」のいずれもが十分に備わっていることが要求される。

日本語診療能力の評価のためには、典型的な症例を想定した患者シナリオを作成し、評価項目、評価基準を策定した．その上でワークショップを開催し、日本語診療能力調査委員に出席してもらい、シナリオを使って受験生役、模擬患者役、評価者役のロールプレイを演じて、評価の標準化を図ることができた。

この結果、日本語で日本人に対して適切に診療できる能力が、日本で医学教育を受けた者と同等あるいはそれ以上の能力を有すると評価できる日本語能力調査を開発することができた。

平成23年10月29日、30日に厚生労働省内で日本語診療能力調査を47名（1名は欠席）の被調査者に実施した。調査の際には、評価者が評価すると同時にビデオ撮影を行い、平成23年11月4日の合否判定会議で調査委員による評価表とビデオ確認をあわせ、より公正かつ厳正な判定を行うことができた。

D. 考察

本研究では、外国医師の日本語を用いた診療能力を適正に評価できることが確認された。平成24年度以降は、さらに日本語診療能力調査の評価向上に向けた取組を行う予定である。また、外国医師を対象にした日本語診療能力調査をより発展させることにより、日本の医学部を卒業した者に対する臨床技能評価にも適応できるようなシステムの構築に貢献することが期待される。

なお、今年度の研究では＜外国医師向け＞「医師国家試験受験資格認定及び日本語診療能力調査に係るパンフレット」（仮称、和英対訳）を作成するには至らなかったが、次年度以降に作成し、日本診療能力調査の体系化を図る予定である。

E. 結論

日本語能力調査による適正な評価法を開発し、日本語で国民に安心かつ安全な医療を提供できる能力のある外国医師を判定することができた。

F. 健康危険情報

該当なし

G. 研究発表

1. 論文発表

なし

2. 学会発表

なし

H. 知的財産権の出願・登録状況

1. 特許取得

なし

2. 実用新案登録

なし

3. その他

なし

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Review

The Current Medical Education System in the World

Nobuo Nara[1], Toshiya Suzuki[1] and Shuji Tohda[2]

1) Center for Education Research in Medicine and Dentistry
2) Laboratory Medicine, Tokyo Medical and Dental University, Yushima 1-5-45, Bunkyo-Ku, Tokyo 113-8510, Japan

To contribute to the innovation of the medical education system in Japan, we visited 35 medical schools and 5 institutes in 12 countries of North America, Europe, Australia and Asia in 2008-2010 and observed the education system. We met the deans, medical education committee and administration affairs and discussed about the desirable education system. We also observed the facilities of medical schools.

Medical education system shows marked diversity in the world. There are three types of education course; non-graduate-entry program(non-GEP), graduate-entry program(GEP) and mixed program of non-GEP and GEP. Even in the same country, several types of medical schools coexist. Although the education methods are also various among medical schools, most of the medical schools have introduced tutorial system based on PBL or TBL and simulation-based learning to create excellent medical physicians.

The medical education system is variable among countries depending on the social environment. Although the change in education program may not be necessary in Japan, we have to innovate education methods; clinical training by clinical clerkship must be made more developed to foster the training of the excellent clinical physicians, and tutorial education by PBL or TBL and simulation-based learning should be introduced more actively.

Corresponding Author: Nobuo Nara
Center for Education Research in Medicine and Dentistry, Tokyo Medical and Dental University, Yushima 1-5-45, Bunkyo-Ku, Tokyo 113-8510, Japan
E-mail: nara.mlab@tmd.ac.jp
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Key words: medical education, graduate-entry program (GEP), problem-based learning (PBL), team-based learning (TBL), simulation-based learning

Introduction

The purpose of the medical education is mainly to generate excellent medical physicians. There are several diverse system of medical education in the world. We do not know which system is the best for training of medical students. It is a big issue in Japanese medical schools to seek for the desirable medical education system. For this purpose, it is useful to observe and analyze how medical education is carried out in medical schools in the overseas countries. In the present study, we visited 35 medical schools and 5 institutes such as medical council or national board examination organization in 12 countries including North America, Europe, Australia and Asia from February 2008 to December 2010. We met the dean, the education committee and the administration affairs in each medical school and the representative of each institute. Before the meeting, the questionnaires were sent in advance (Table 1). The answers were obtained at the meeting, and we discussed based on the answers. The meeting lasted for a full day to 5 days at each medical school or institute.

We report here the current medical education system in the world and discuss the desirable education system in Japan.

Education system in the overseas medical schools

The education system is remarkably different in the world (Figure 1). Furthermore, it is not the same even in

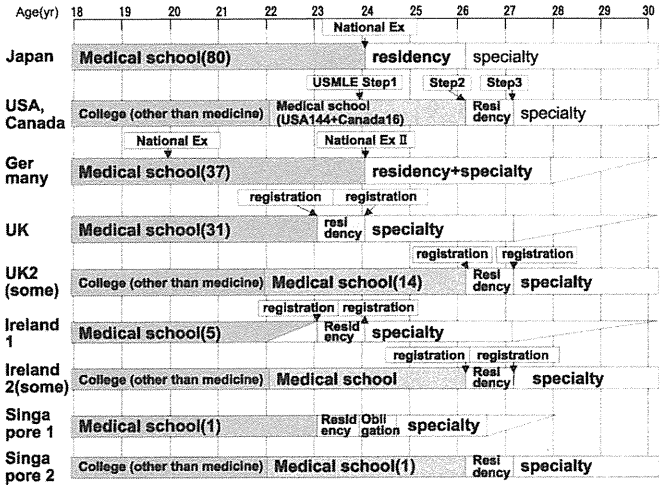

Figure 1a : Summary of the medical education system 1

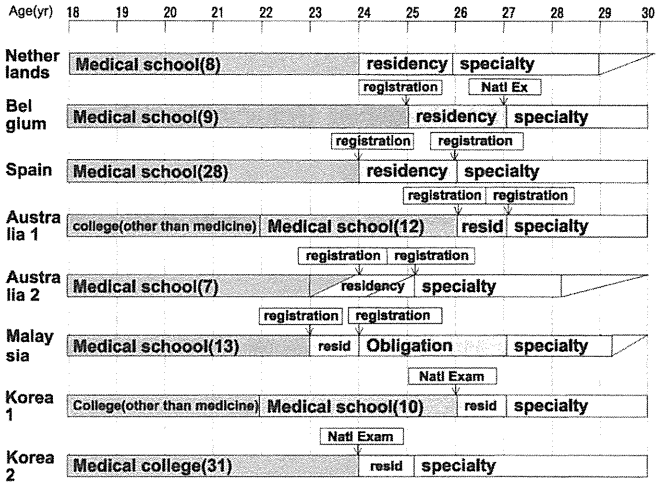

Figure 1b : Summary of the medical education system 2

Table 1. Main items of the questionnaires

1. The curriculum and syllabus in medical school
   - curriculum and syllabus
   - clinical training system
2. The admission system
   - entrance examination
   - number of students
3. The facilities of medical education
   - lecture theaters
   - clinical training including simulation laboratories
   - tutorial rooms
   - clinical training hospitals
4. Faculty of medicine
   - numbers of teaching staff
   - research activities
5. The national board examination

the same country; the education system and curriculum show marked diversity among universities. We can divide the overseas medical education system into 3 groups. Type 1 system accepts high school leavers and the education period is 5～7 years. Germany, the Netherlands, Belgium, Spain, Scotland, and Malaysia belong to this group. Japan also takes this system, while 36 medical schools also accept 5-40 (mostly 5) college-graduates at the 2nd or 3rd year class. This system is merely limited term college graduate-entry system and we include Japanese medical education in this group. Type 2 system accepts only college graduates with baccalaureate and educate them for 4 years. USA and Canada belong to this group. Type 3 system is the mixture of both type 1 and type 2. Namely, it accepts both high school leavers and college graduates. Australia, England, Ireland, Korea and Singapore belong to this group.

Type 1 medical schools (or called medical colleges in Korea) accept usually 18-19 years old high school leavers (Figure 2a). For admission the grades at high school and the results of the nation-wide common achievement tests are evaluated. Entrance examination in each medical school as in Japan is rare. Moreover, in some countries such as the Netherlands, Belgium and Malaysia, the government determines the medical school to which each applicant admits. The education periods are 5～7 years; 5 years in Scotland, and Malaysia: 6 years in Japan, Germany, the Netherlands, and Spain; 7 years in Belgium. The main aim of type 1 medical school is to create clinical physicians. At graduation the students get the degree of medical doctor or medical bachelor.

Type 2 medical schools accept only bachelors graduated from colleges of other than medicine (Figure 2b). Normally applicants are 22～24 years old. For admission, scores of medical college admission tests (MCAT) and performance of college are evaluated in USA. Personal interview is also important for evaluation to confirm the motivation for learning medicine. Students take four years education at medical school and get the degree of medical doctor at graduation. Some schools have MD-PhD course to encourage students to be physician scientists.

Type 3 medical schools accept both high school leavers and college graduates (Figure 2c). In the countries that accept type 3 medical schools, there are three kinds of schools. Some schools exclusively

accept either high school leavers or college graduates. Other schools accept both of them; double track education courses are carried out in the same school.

Curriculum

The curriculum of medical school is composed of premedical science, basic medicine and clinical medicine. In type 1 medical school, students learn liberal arts including philosophy, ethics, mathematics, physics, chemistry, biology, foreign language, etc. in premedical course for 0.5 ~ 2 years. After the premedical course, students learn basic medicine such as anatomy, histology, biophysics, biochemistry, bacteriology/virology, pathology, hygiene, public health, physiology, pharmacology, etc. for 1.5 ~ 2 years. Finally they learn clinical medicine such as internal medicine, pediatrics, surgery, obstetrics, gynecology, orthopedics, urology, otorhinolaryngology, ophthalmology etc. for 2 ~ 3 years including clinical clerkship. The example of the traditional curriculum in Germany from which country Japan introduced medicine about 100 years ago is shown in Table 2.

It is not necessary for students in type 2 medical schools to take premedical course because they have already learned before admission. In 4 years education, students learn basic medicine for two years and clinical medicine for two years. However, the integrated course of basic medicine and clinical medicine has been recently introduced in most of type 2 medical schools.

Education methods

While education system and curriculum are diverse among medical schools even in the same country, the aim of almost all medical school is focused on generating excellent clinical physicians. Therefore, most medical schools make a weight in the education of clinical medicine, especially clinical clerkship. To meet this aim, education methods have been recently changed.

Formally, the knowledge of medicine has been taught by teachers through lectures in a large theater. Students have learned mainly medical practice by observation at the outpatients clinic and ward. Although these education methods play important roles even at present, most medical schools have recently introduced new education methods to promote clinical training for medical students. Students get a large amount of recent medical knowledge by tutorial system such as problem-based learning[1-3] and team-based learning[4-6]. For this purpose, e-learning system has been developed

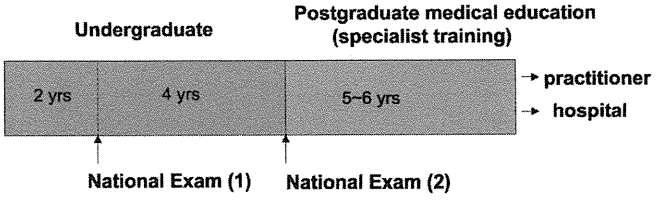

Figure 2a : Framework of the type 1 medical school; Figure shows the example in Germany

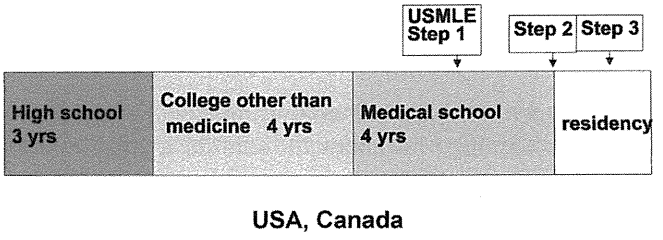

Figure 2b : Framework of the type 2 medical school

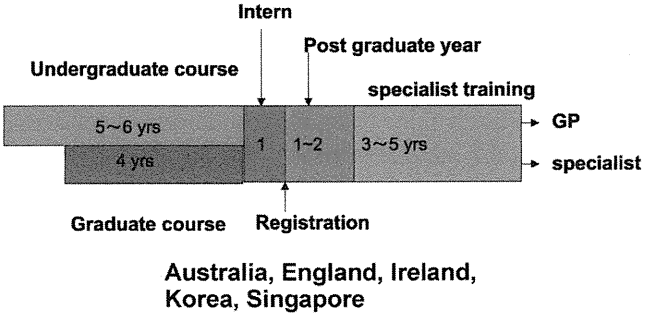

Figure 2c : Framework of the type 3 medical school

in most medical schools. Integrated course combined with basic medicine and clinical medicine has been introduced in many medical schools in the world. For example, students simultaneously learn basic bacteriology and clinical infectious disease at the same lecture or tutorial. Respiratory physiology and chronic obstructive pulmonary diseases are learned in the same course. The integrated course is useful for students to understand the pathophysiology and clinical features of the diseases at the same time.

Students are usually exposed to clinical medicine at the earliest stage of medical school to keep and promote the motivation to master clinical medicine. Namely they start to learn communication skills and practical skills at the beginning of curriculum. Clinical

Table 2. Traditional Curriculum in Germany

Year of Class	Contents
1, 2	Physics, Chemistry, Biology, Anatomy, Physiology, Biochemistry, Psychology
3	Hygiene, Microbiology, Pathology, Pharmacology, Clinical Chemistry and Laboratory Diagnostics, Radiology, Prevention of disease, Epidemiology, Statistics, Forensic Medicine, Internal Medicine
4	Internal Medicine, Surgery, Emergency Medicine, Ophtalmology, Ear-Nose-Throat Disease, Urology, Orthopedics, Oncology, Pediatrics, Dermatology, Infectious Diseases
5	Neurology, Psychiatry, Anesthesiology, Gynecology and Obstetrics, Infectious Diseases. Clinical rotations in Pediatrics, Gynecology and Obstetrics, Internal Medicine, Surgery, General Medicine
6	Clinical year. Four months internship: Surgery, Internal Medicine, one elective

clerkship system is reasonable to master clinical skills. Students belong to the medical team as a staff and do medical practice under the supervision of attendants. This clinical clerkship system is most advanced in USA and Canada. Medical schools of the other countries have also introduced actively this system. Before entering clinical clerkship, students usually take simulation-based learning using standardized patients and/or models[7].

Although clinical training is the principal role of medical school, it is also of importance to create physician scientists for the advance of medical science. For this purpose some medical schools have introduced elective course such as MD-PhD course. Approximately 40% of students in Stanford university entered to this elective course and got both MD and PhD degrees at graduation. Furthermore exchange program is active especially in Australia and Europe to promote globalization in medicine. In fact some medical students from the overseas medical schools such as Australia and Germany visited our university to study medicine with Japanese students.

Innovation and its effect of medical education in Germany

Nobody knows which education system is best to generate excellent medical physicians. We may judge based on the comparison between the current system and the previous system. The effect of education, however, is usually reflected by the social factors such as politics, economics and culture. Historical control is not necessarily an appropriate model for the comparison.

Very attractive and important pilot study is under way in Charité University in Berlin, Germany. It accepts approximately 603 students per year. Students are divided into two classes by lot; 540 students for regular course and 63 students for reformed course. Informed consents are obtained from students of both groups. Students of either group can take appropriate education to be medical physicians; they do not think unfair even if they belong either class. Regular course students take the ordinary curriculum shown in Table 2. The education is mainly based on the lectures. On the other hand, the reformed course students take exclusively tutorial education. 63 students are divided into 9 groups and take integrated education using PBL.

The first five years of the reformed course are divided into two phases. At the first phase, the students learn organ-based medicine such as locomotion, cardio-vascular system, respiratory system, alimentation system, blood system, etc. The anatomy, physiology, biochemistry, pathology, pharmacology, pathophysiology and disorder of each organ are learned by tutorial education. At the second phase, they learn basic medicine and clinical medicine chronologically such as pregnancy, new born, baby, infant, schoolchild, adolescent and adult. Clinical clerkship is also included in this phase. The last 6th year is a clinical clerkship year where students rotate internal medicine for 4 months, surgery for 4 months and elective department for 4 months. In this period, the reformed course students learn with the regular course students.

It is of interest to watch the outcome of the reformed curriculum. The scores of the national board examination at graduation is not significantly different between the reformed and regular course students. The reformed course students, however, mastered more clinical skills, which could not be evaluated in national board paper examination, than the regular course students. Therefore the education by the reformed

curriculum is considered successful.

Discussion

The medical practice has recently made a big change according to the changes in society such as politics, economics and culture, and several problems have emerged in Japan. The number of clinical physicians is absolutely short as compared with the population[http://www.mhlw.go.jp]. The shortage of rural medical practitioners, surgeons, obstetricians and pediatricians is the major issues to be urgently resolved in Japan. These problems are expected to be, at least in part, resolved by increasing the number of excellent medical physicians generated annually by all medical schools.

Owing to the advance in medical science and medical practice, specialists with highly advanced technology are required in the current medical practice. On the other hand, general practitioners who can do any primary care regardless of specialty are also needed, especially in rural areas. On the basis of these consideration, the innovation in medical education is considered an urgent issue in Japanese medical schools. The necessity of the improvement of clinical training is especially pointed out by a visiting professor from USA[8]. The current medical education in the overseas countries gives us very useful information for the innovation on medical education in our country.

The amount of knowledge which medical students have to learn in medical school has been enormously increased. It is almost impossible for medical students to master and remember all of them. Fortunately, this problem can be resolved by the recent advance in information technology. Students can easily access the internet to get information; they can search, sort, and critically analyze any topics using internet. Therefore, memorization skills is not necessarily important these days. Whenever students face to some problem, they can solve it by internet. E-learning system in medical school provides information source to students. Thus the development of self-learning system is expected as more efficient method than lecture-based education[1-6]. Tutorial education by PBL or TBL will promote the self-learning ability of students. Furthermore, the integrated education of basic and clinical medicine will help students learn efficiently clinical medicine including the pathophysiology of the diseases.

On the other hand, communication skills and practical skills cannot be mastered in short term. History taking and physical examination is most basic and important skills which all medical students should master. These skills cannot be easily accomplished by lecture-based education. Tutorial education for small group students is suitable to get these skills. Simulation-based learning using standardized patients and models is useful for students to master practical skills[7]. Students can train by themselves safely and repeatedly using models. Feedback and brushup of practical skills are feasible by using models. Finally training by clinical clerkship is most important for students to develop communication skills, practical skills and clinical reasoning.

The development of self-learning education, simulation-based learning and clinical training that are trend in the overseas medical education is considered most important in the innovation of medical education in Japan.

Acknowledgement

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References

1. Wood DF. Problem based learning. BMJ 326: 328-330, 2003.
2. Prince KJ, van Eijs PW, Boshuizen HP, et al. General competencies of problem-based learning (PBL) and non-PBL graduates. Med Educ 39: 394-401, 2005.
3. Cohen-Schotanus J, Muijtjens AM, Schonrock-Adema J, et al. Effects of conventional and problem-based learning on clinical and general competencies and career development. Med Educ 42: 256-265, 2009.
4. Michaelsen LK. Team-based learning in large classes. in Michaelsen LK, Knight AB, Fink LD, eds. Team-based learning: A transformative use of small groups. Westport, CT; Praeger 157-171, 2002.
5. Nieder GL, Parmelee DX, Stolfi A, Hudes PD. Team-based learning in a medical gross anatomy and embryology course. Clin Anat 18: 56-63, 2005.
6. Thompson BM, Schneider VF, Haidet P, et al. Team-based learning at ten medical schools: two years later. Med Educ 41: 250-257, 2007.
7. Nara N, Beppu M, Tohda S, Suzuki T. The introduction and effectiveness of simulation-based learning in medical education. Intern Med 48: 1515-1519, 2009.
8. Rao RH. Perspectives in medical education. 1. Reflections on the state of medical education in Japan. Keio J Med 55: 41-51, 2006.

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Original Article

The Present State and Problems of Graduate-Entry Programs (GEP) in National Medical Schools in Japan

Nobuo Nara[1], Toshiya Suzuki[1] and Yoshio Nitta[2]

1) Center for Education Research in Medicine and Dentistry, Tokyo Medical and Dental University, Yushima 1-5-45, Bunkyo-Ku, Tokyo 113-8510, Japan
2) Common Achievement Tests Organization, Sasu-building 7F, Yushima 1-9-15, Tokyo 113-0034, Japan

It is not certain whether graduate-entry program (GEP) or non-graduate-entry program (non-GEP) in medical education is desirable to foster excellent medical physicians in Japan. In order to clarify the present state and problems of GEP, we visited 27 national medical schools which have introduced limited term college graduate-entry program and discussed with the deans, the education committee and administration affairs.
GEP students are elder and usually study harder than regular non-GEP course students. Therefore, they got the higher grades at 1-2 classes of GEP course than the regular non-GEP course students. However, some GEP students lost motivation to study medicine and got poor grades at higher class. There was no definite difference of the final grades at the graduation between GEP and non-GEP students. Most of GEP students became medical practitioners and few students chose physician scientist majoring in basic medicine.
We did not find any advantage of GEP compared with regular non-GEP. The results show that the introduction of GEP throughout Japan should be discussed carefully.

Key words: graduate-entry program, medical education

Introduction

While the medical education system is diverse in the world [1], medical schools are universally expected to bring up excellent clinical physicians and also superb physician scientists. To meet this aim, we do not know which education system is the best in our country. We are interested in which system is better, graduate-entry program (GEP) or non-graduate-entry program (non-GEP). In Japan, the first GEP trial started in 1975 at Osaka University Medical School [2]. The purpose of this GEP was to foster excellent physician scientists and also clinical physician with profound knowledge in broad spectrum of science. This program was successful and significant numbers of basic medical scientists were turned out. Four hundred and sixty three students entered GEP course in 1975-2004, and 415 students have graduated until 2004. 9.3 % of GEP graduates became physician scientists majoring in basic medicine, while 6.2 % of non-GEP graduates chose basic medicine. 6.3 % of GEP graduates became the director of general hospital, whereas 2.9 % of non-GEP graduates became the director of general hospital. Observing this good outcome, the other medical schools began to introduce GEP since 1998.

At present, 28 national and 8 private medical schools among 80 medical schools in Japan have introduced limited term college graduate-entry program in addition to regular non-GEP. We visited 27 national medical schools which have introduced limited term college graduate-entry program and analyzed the present state and problems with GEP.

Corresponding Author: Nobuo Nara
Center for Education Research in Medicine and Dentistry, Tokyo Medical and Dental University, Yushima 1-5-45, Bunkyo-Ku, Tokyo 113-8510, Japan
E-mail: nara.mlab@tmd.ac.jp
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Methods

To discuss the present state and problems of GEP in Japan, we visited 27 national medical schools between November 30, 2007 and February 20, 2009; we did not have opportunity to visit 1 national medical school. Eight private medical schools have also introduced GEP until now. Because the admission system is markedly different between national and private schools, we chose the national schools with similar admission system in the present study.

We sent questionnaires about the education system of GEP in advance before visiting the medical schools. They included the admission system, the background of GEP students, the curriculum, the grades, the studying motivation and attitude, and the career path after graduation. We met the dean, the education committee and the administration affairs of each medical school. On the basis of the answers to the questionnaires sent previously, we discussed the advantages and disadvantages of GEP compared with regular non-GEP. Based on the present state and problems of GEP, we discussed the future education system in all medical schools in Japan.

The answers were analyzed statistically and data were summarized. All medical schools in this study agreed that the summarized data obtained in the present study would be reported to the Ministry of Education, Culture, Sports, Science and Technology of Japan and be published in medical Journal.

Results

Each medical school accepts approximately 80 to 120 students per year. Twenty seven medical schools also accept 5 to 20 college graduates in addition to high school leavers of 18-19 years.

The backgrounds of the GEP students are shown in the figure 1 and 2. Most of GEP students enter medical schools at the age of 22 to 30 years. However, approximately 3 % students were over 36 years at admission. About 85 % of the students specialized in natural sciences such as biology, pharmacology, agriculture, engineering, etc., in college. The remaining 15 % of the students specialized in non-natural sciences such as liberal arts, law, economics, etc., in college. The grades in medical school were not significantly different between students who majored in natural sciences and non-natural sciences.

College graduates join regular non-GEP course

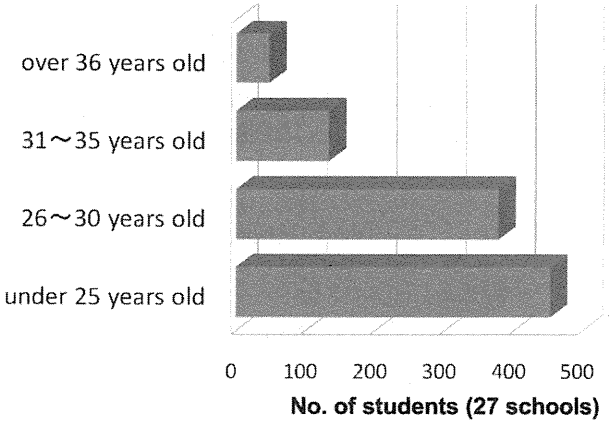

Figure 1 : Background of GEP students (Ages on admission)

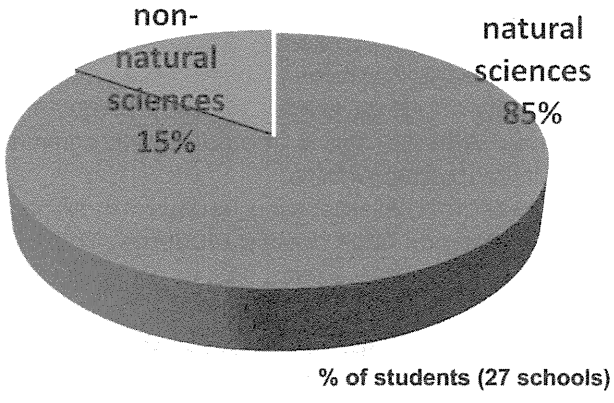

Figure 2 : Background of GEP students (Bachelor degree)

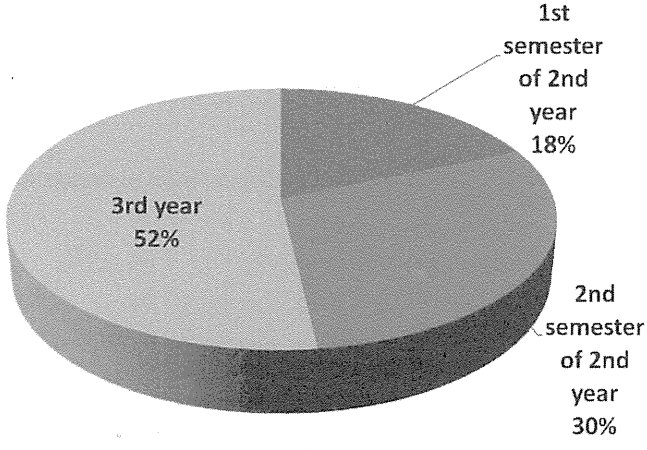

Figure 3 : Time of admission of GEP students

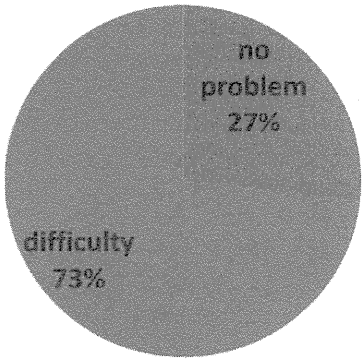

Figure 4 : Difficulty in the special GEP curriculum

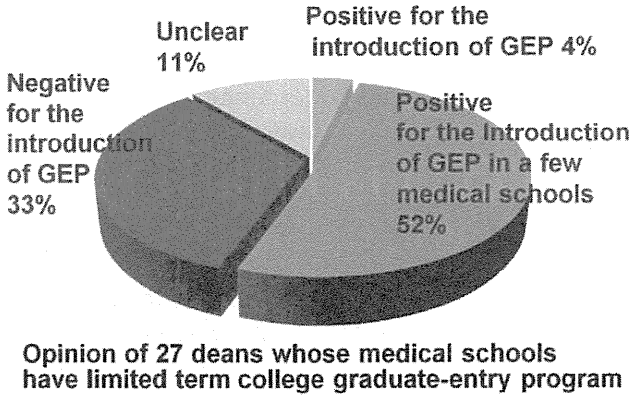

Figure 5 : Opinions of the deans about the introduction of GEP in Japan

students in the 2nd or 3rd year class (Figure 3); they receive medical education for 5 or 4 years, respectively. They take the same education curriculum as the non-GEP students. The education of first 1 or 2 years of the regular course which the GEP students skipped has to be learned by the students themselves. In these cases, a special curriculum is required for the GEP students in addition to the regular course curriculum. The special curriculum makes the burden quite heavy for both students and faculty (Figure 4).

We met the deans, the education committee and/or the administration affairs of each medical school and got the information about the GEP students. Most of them reported as follows. GEP students usually learn with more intensity than non-GEP students. Furthermore some students do very well and can be opinion leaders in their class. There is no friction noted between GEP and non-GEP students. They get the higher grades at 1-2 year class of GEP course than non-GEP students. However, there was no definite difference in final grades at the graduation. Some students lost motivation to study medicine and got poorer grades at graduation than non-GEP students. Namely, GEP students were divided into two groups; some got high scores and others got poor scores. This phenomenon was pointed out in almost all medical schools which have limited term college graduate entry program when compared with the regular non-GEP course. Twenty-four medical schools did not report any friction or trouble between GEP students and regular non-GEP students, but they mentioned that GEP students seemed to be rather isolated from non-GEP students and they made their own group.

These data were shown at our visit. However, the statistical analysis of some of these data was not feasible because of a small number of GEP students and diverse curriculum among medical schools.

Some GEP students failed to pass the national board examination. In 5 medical schools, the percentage of GEP students who passed the national board examination was 75-80 %. The passing rate was significantly worse than that of non-GEP students in each school.

Twenty medical schools showed the data of career selection after graduation. The other 7 schools had no information about the career path because those schools introduced GEP quite recently. All graduates from 17 schools became clinical physicians. Only 5 graduates of the other 3 schools selected basic medicine such as pathology or public health. Namely, most of GEP students became medical practitioners, and only a few students became physician scientists majoring in basic medical sciences after graduation. Therefore, one of the main purposes of GEP, fostering superb physician scientists, has not been accomplished in most medical schools which accept GEP.

Finally, we asked the deans of 27 medical schools their opinion for the moving the present non-GEP to GEP in medical education in Japan. Approximately 33 % of the deans denied the complete introduction of GEP in Japanese medical schools (Figure 5). Fifty two percent of the deans approved the introduction of GEP course in some medical schools, for example one school at the east area of Japan and another school at the west area, but not in all medical schools. Only 4 % approved a complete introduction of GEP in all Japanese medical schools.

Discussion

The regular program in Japanese medical schools is non-GEP; high school leavers of 18 to 19 years enter medical schools and normally study medicine for 6 years. Basically they learn liberal arts, basic medicine and clinical medicine for 4 years and take clinical clerkships for two years. All medical schools have introduced a model core-curriculum proposed by the Ministry of Education, Culture, Sports, Science and Technology of Japan and the students have to pass the common achievement test composed of computer based testing (CBT) and the objective structured clinical examination (OSCE) just before taking the first clinical clerkship. After graduation they have to pass the national board examination and are then obliged to take a residency program in teaching hospitals for 2 years.

Some problems remain to be solved in the present medical education in Japan and the introduction of GEP is considered to give some clues to the solution at least in part. First, the shortage of physicians is now the big issue in Japan [http://www.mhlw.go.jp/stf/houdou/2r9852000000ssez.html]. If the medical education moves from 6 to 4 years program, the number of physicians will increase in two years. Second, there is an argument that 18 to 19 years students may be too young to study medicine. Communication skills and practical skills are very important in medical practice. These skills may be difficult for younger students to master. Third, the number of physician scientists, especially majoring in basic medical sciences such as physiology and biochemistry has been recently decreased dramatically. Some people consider that college graduates with baccalaureate are more interested in research work and are expected to be physician scientists after graduating from medical school.

Some advantages with GEP as compared to non-GEP are pointed out as follows [2, 3-6]. First, more mature students with higher motivation to study medicine are expected to enter medical schools. Communication skills of elder GEP students may be superior to non-GEP students. Second, GEP students usually learn with more intensity than non-GEP students because of the shorter program. Third, some students do very well and can be opinion leaders in their class. Finally, there is no friction between GEP and non-GEP students.

However, some of these advantages reported previously were not confirmed in the present study. Some GEP students lost their motivation to study medicine, got poor grades and failed to pass the national board examination. Although some GEP students became opinion leaders, this seemed just due to elder ages. Other GEP students did not become opinion leaders. These phenomena may be due to either the impertinence of the present GEP or unsuitable curriculum.

Furthermore, there are shortcomings of GEP. GEP requires longer education period to become a physician. As a result, his/her practice time will be shorter in life. The educational expense is higher because of longer educational period, and therefore the students are eager to earn money just after graduation. Consequently, they do not choose basic medicine where they will earn less. The graduates are usually older than non-GEP. The older students do not prefer surgery that requires physical strength, as compared to internal medicine. The admission test is usually hard to pass. The students will vigorously prepare only to pass the entrance examination of the medical school. They may not seriously have the interest in college courses.

As shown, GEP has some advantages compared to non-GEP. However, most of such advantages of GEP should be overcome by reforming the present education system in Japan. For example, the admission system should be improved to select more mature students. The present admission in most Japanese medical schools is mainly dependent on the scores of the paper examinations of each medical school. Precise interview examination should be more effective for the evaluation of the maturity of the examinees. The introduction of elective courses or MD/PhD courses will encourage the students to be physician scientists. On the contrary, the shortcomings of GEP such as the older age of the graduates may not easily overcome. The problems of the shortage of surgeons and rural medical physicians will become worse than the present system.

In taking account of the longer education period and higher expense, we should be careful before introducing GEP throughout Japan.

Acknowledgement

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References

1. Nara N. An Overview of Medical Education in the World and Graduate-Entry Program in Japan. A Report of Support for University Education Reform by the Ministry of Education, Culture, Sports, Science and Technology of Japan. 2009 (in Japanese).
2. Kiyohara T, Watanabe K, Noguchi S et al. Summary of a 30-year-old system of graduate entry at Osaka University Medical School. *Medical Education (Japan)* 2005, 36: 259-264. (in Japanese, abstract in English)
3. Goldacre MJ, Davidson JM, Lambert TW. Career preferences of graduate and non-graduate entrants to medical schools in the UK. *Medical Education* 2007, 41: 349-361.
4. Calvert MJ, Ross NM, Freemantle N et al. Examination performance of graduate entry medical students compared with mainstream students. *Journal Royal Society of Medicine* 2009, 102: 425-430.
5. Rolfe IE, Ringland C, Pearson SA. Graduate entry to medical school? Testing some assumptions. *Medical Education* 2004, 38: 778-786.
6. Canaday SD & Lancaster CJ. Impact of undergraduate courses on medical student performance in basic sciences. *Journal Medical Education* 1985, 60: 757-763.

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報 告

米国医師国家試験 USMLE における臨床能力評価

鈴木 利哉[*1] 奈良 信雄[*2]

要旨：
・わが国の医学生の臨床能力評価改革に役立てるために，1998 年から臨床能力評価を導入した ECFMG（Educational Commission for Foreign Medical Graduates），2004 年から臨床能力評価を導入した米国医師国家試験 USMLE（United States Medical LicensingExamination）の実施機関 NBME（National Board of Medical Examiners），および ECFMG と NBME が共同で臨床能力評価を実施している CSEC（Clinical Skills Evaluation Collaboration）を視察し，臨床能力評価の現状と医学教育への影響について意見を交換した．
・米国では USMLE への臨床能力評価導入により，医学教育カリキュラムが大きく改革され，臨床能力教育が普及した状況をみると，わが国の医師国家試験にも臨床能力評価を導入することが重要であると思われる．
キーワード：臨床スキル評価，NBME（National Board of Medical Examiners），USMLE（United States Medical Licensing Examination），CSEC（Clinical Skills Evaluation Collaboration），ECFMG（Educational Commission for Foreign Medical Graduates）

Clinical skills evaluation of the United States Medical Licensing Examination

Toshiya SUZUKI[*1] Nobuo NARA[*2]

Abstract
・We visited the National Board of Medical Examiners and the Clinical Skills Evaluation Collaboration Center to discuss with the examiners the present state of the USMLE (United States Medical Licensing Examination) , to which clinical skills evaluation has been introduced.
・Evidence that the introduction of clinical skills evaluation to the USMLE has affected the reform of medical schools curricula in the United States supports the necessity of introducing clinical skills evaluation to the Medical Board Examination of Japan.
Key words: clinical skills assessment, National Board of Medical Examiners, United States Medical Licensing Examination, Clinical Skills Evaluation Collaboration, Educational Commission for Foreign Medical Graduates

緒 言

わが国における医師国家試験への臨床能力評価導入の参考に資するために米国医師国家試験機関（National Board of Medical Examiners; NBME），ECFMG（Educational Commission for Foreign Medical Graduates），および NBME と ECFMG が共同で臨床能力評価を実施している臨

[*1] 新潟大学医学部総合医学教育センター，Comprehensive Medical Education Center, Niigata University School of Medicine［〒 951-8510 新潟県新潟市中央区旭町通 1-757］
[*2] 東京医科歯科大学医歯学教育システム研究センター，Center for Education Research in Medicine and Dentistry, Tokyo Medical and Dental University
受付：2010 年 12 月 27 日，受理：2011 年 12 月 2 日

床能力評価共同機関（Clinical Skills Evaluation Collaboration; CSEC）を訪問し，米国医師国家試験USMLE（United States Medical Licensing Examination）の現状と医学教育への影響を調査した．

米国・カナダでは，外国の医学部を卒業した者はECFMGによる資格試験としてUSMLE Step 1とStep 2およびECFMG English Test（TOEFL；Testing of English as a Foreign Languageで代用可）に合格して初めて国内で診療することが認められてきた．1998年にはECFMGに臨床能力評価clinical skill assessment（CSA）が導入され，2004年以降はECFMG English Testが免除され，それに代わって，英会話でのコミュニケーション能力を含めた臨床能力評価がCSECによるStep 2 clinical skills（Step 2 CS）として実施されるようになった．同時期に，米国・カナダの医学部出身者に対しても，2004年からUSMLEの臨床能力評価試験としてStep 2 CSが義務づけられるようになった．

わが国の医師国家試験では臨床能力評価は行われていないが，その必要性は多くの医学教育関係者によって認識され，導入を巡って活発な議論が展開されている[1]．臨床実習前共用試験には2005年から客観的臨床能力試験（OSCE）が導入され，臨床実習後の臨床能力を評価するものとしてAdvanced OSCEが多くの大学で実施されるようになった[2]．2011年7月に行われた文部科学省主催の医学・歯学教育指導者ワークショップ事前アンケートでは，74医学部から回答が得られ，卒業または進級の要件としてAdvanced OSCEを実施している医学部が33校（45%），それ以外の形でAdvanced OSCEを実施している医学部が13校（18%）とAdvanced OSCEを導入している医学部は46校（62%）にのぼっている[3]．この事実は，医学部教育で学生の臨床能力を評価することの重要性が広く認識されていることを示す．医師免許を与える医師国家試験においても，医学部卒業生に対して医学的知識に加え，基本的臨床能力やコミュニケーション能力を適正に評価することが重要であると考えられる[1]．

わが国の医学部卒業者が，米国で診療するための米国医師国家試験の受験情報はいくつか入手可能であるが[4]，これらの情報だけでは臨床能力評価の方法，意義，評価法，成果等を実際に理解するには十分ではない．米国で臨床能力評価試験を導入した背景や現状を知ることは，本邦において臨床能力評価試験を導入するための参考になると思われ，ここに紹介する．

図1　NBMEの建物外観．ペンシルベニア州フィラデルフィア市

方　法

2010年11月19日米国ペンシルベニア州フィラデルフィア市にあるNBME[5]（**図1**）を訪問し，USMLEの担当者にインタビューし，コンピュータによるMCQ試験や臨床能力評価の現状と医学教育への影響について意見を交換した．さらに，隣接するECFMGの建物内にあるCSECセンター（**図2**）で行われているStep 2 CS試験を視察した．この会場はECFMGの臨床能力評価としても利用されている．なおUSMLEはNBMEとFederation of State Medical Boards（FSMB）[6]の両者により共同運営されている．

結　果

米国医師国家試験USMLEの実施はNBMEによって行われ，NBMEは受験料収入のみで運営されている．USMLEはStep 1, Step 2 clinical knowledge（Step 2 CK），Step 2 CS，Step 3の4つのテストから構成されている[5]．Step 2 CSを除き，他の3つはコンピュータを用いたMCQ試

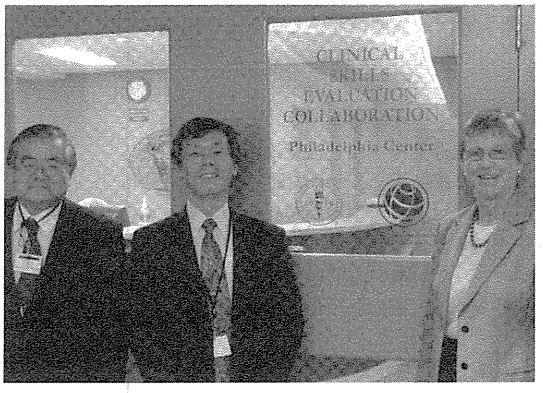

図 2 Step 2 CS の試験室（CSEC フィラデルフィアセンター）．NBME に隣接する ECFMG の建物内にあり，NBME（ガラス面左のロゴマーク）と ECFMG（同右）により共同運営されている．右から責任者 Ann C. Jobe 博士，奈良信雄，鈴木利哉．

験形式で行われている．いずれのテストも採点されない新作問題を 10% 含み，試験問題として適切であるかどうかを Interdisciplinary Review Committee（IRC）が評価した後，翌年度以降に採点対象問題として採用されるシステムになっている．

Step 1 は基礎医学の知識を問う MCQ 試験 322 題（7 時間）で，基礎医学教育課程修了後に受験することができる．受験料は 525 ドル（2011 年現在）である[7]．Step 2 CK は臨床医学の知識を問う MCQ 試験 352 題（8 時間）で，臨床医学教育課程に入ってから受験することができる．受験料は 525 ドル（2011 年現在）である[7]．Step 2 CS は臨床能力を評価する実地試験（5 時間）で，臨床医学教育課程に入った後から受験することができる．受験料は 1,120 ドル（2011 年現在）である[7]．Step 2 CK と CS は，指導者の下で臨床医として働けるかどうかを評価するのが目的になっている．Step 3 は医学部卒業後，単独で臨床医として活動するのに必要な臨床知識を問う症例問題型の MCQ 試験 480 題（1 日目 7 時間；2 日目 3 時間）である．なお，2 日目には 9 題の computer-based case simulations（CCS）も出題され，臨床推論能力が評価される．受験料は 730 ドル（一部異なる州がある）である（2011 年現在）[6]．MCQ 試験の会場は米国・カナダに 350 カ所，海外約 110 カ所用意されており[7]，日本でも年間を通して受験することができる（東京都中央区日本橋茅場町，東京南麻布テンプル大学，大阪府大阪市北区中津）[4]．USMLE の受験回数制限は州ごとに異なり，無制限に受験が可能な州からアラスカ州のように 1 回しか認めない州までさまざまである．ただし，一度合格すると高得点をめざして再受験することは認められていない．

Step2 CS は MCQ により医学生の医学的知識を測定するほかの 3 つの試験とは異なり，①医学生の病歴聴取／身体診察（integrated clinical encounter; ICE），②コミュニケーション能力，③英会話の能力，を評価することを目的としている．米国医学部 129 校のうち 3 校を除いて卒業要件に Step 2 CS 受験を義務づけている．これは 2011 年の医学生 18,144 名（98.3%）に該当している．残り 3 校の医学生 309 名（2%）に対しては医学部卒業の要件にはなっていないが，医学生は自主的に受験しているとのことであった．ECFMG を受験する外国の医学部卒業生は Step 2 CS に合格しないと米国で医師として働くことが許可されない[5]．受験会場である CSEC センターは，NBME による臨床能力評価の質を担保するため，フィラデルフィア 2 カ所（健常者用と身体障害者用），ロサンゼルス，シカゴ，アトランタ，ヒューストンの 6 カ所に限定されている．受験生が 1.8 万人と多い一方，一度に 12 名しか受験することができないため，1 日を午前，午後，夜の 3 つのセッションに分け，ほぼ連日のように試験が行われている．受験生は 12 ある各ステーションの部屋のなかでシナリオにもとづいて 15 分間 SP（Standardized Patient；標準模擬患者）を診察し，廊下に出て Patient Note を 10 分間でコンピュータ入力する．この形式の臨床能力評価試験を CPX（clinical performance examination）と呼んでいる．Step 2 CS の問題は非公開であるが，Patient Note はサンプルとして公開されているものがあるので以下に示す[9]．

現症，既往歴，家族歴（history）：現症，既往歴，社会歴，家族歴のなかで明らかに問題のあるものを記載すること．

48歳の胸痛を訴えている女性．1.5時間前から胸がやけるような痛みがはじまった．痛みは放散することはなく，軽度の呼吸困難，軽度の嘔気と発汗を伴った．治療は受けなかったが，20分後に痛みは改善した．今は痛みはない．女性は過去2－3カ月の間，似たような症状に悩まされてきた．食べ過ぎたり，運動した後に症状はよく起こったが，制酸薬を飲むと少し改善していた．高コレステロール血症の既往があるが治療は受けていない．毎週テニスをしている．以前3年間で30箱程度タバコを吸っていた．強いストレスは受けていないという．母親は2型糖尿病，兄弟に詳細不明の心臓病がある．高血圧や糖尿病の既往はないが，この2年間医者にかかっていない．

身体所見：患者の主訴に関係する陽性所見，陰性所見のみを記載すること．

苦しそうな様子は見られず，身体所見はほとんど異常なく，早く帰宅したがっている．
血圧　160／80mmHg.
胸部所見：圧痛なし，呼吸音は両側正常で，wheezes，rhonchi，ralesなし．
心臓所見：心尖拍動正常，心リズム　整，心雑音・心摩擦音なし．
腹部所見：平坦，腸雑音正常，腫瘤や肝脾腫なし，心窩部に圧痛や反跳痛なし．

鑑別診断：1が最も可能性の高い疾患となるように，この患者の症状に合う可能性の高い疾患を順に5つリストアップしなさい（通常，鑑別診断は4つ以下であることが多い）．
1　逆流性食道炎
2　消化性潰瘍
3　虚血性心疾患
4　胆石症
5　筋骨格性胸痛

診断に必要な検査：診断のためにすぐに行うべき検査を5つ以内あげなさい．

1　便潜血検査
2　心電図
3　胸部エックス線
4　上部消化管内視鏡
5

医師国家試験に臨床能力評価を導入する場合，最も重要な課題の一つがSPの育成であると思われる．NBMEでは，俳優，引退した家政婦，警察官，消防士，看護師などを対象に，週2回3カ月間かけてSPを育成している．育成期間中は時給16ドル，本試験のときは時給18.5ドル支払われていた．Step 2 CSの臨床能力評価はSPにより行われており，国家試験としての客観性，公平性を担保するためにSPの標準化を目指して入念な教育が施されているようであった．視察時には，比較的高齢のSPが多かったが，男女比は1対1であった．SPは容易に医学生の診察を受けることができるように薄いガウンを羽織っているだけであった．学生の私物の持ち込みは禁止され，厳しく試験は管理されていた．学生の診察の様子は管理室でビデオモニターされ，音声とともに録画され，これは不正防止と不適切な医行為を行う学生がいる場合に教員がチェックして警告する目的とのことであった．

学生が記載したPatient Noteの評価は，各大学から派遣された教員（医師）によって行われる．医学生が診察室外に出てPatient Noteを記載している間にSPは診察室に置いてあるコンピュータにある評価項目に対してyesまたはnoで入力し，総合評価はbad，good，fairで入力するようになっていた．医学生の臨床能力はSPの