Specialist Qualification Program for Physicians Prepared by the Japan Society for Occupational Health

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Abstract: Specialist Qualification Program for Physicians Prepared by the Japan Society for Occupational Health: Toshiteru Okubo. University of Occupational and Environmental Health—The Japan Society for Occupational Health introduced a new qualification program for occupational physicians in 1992. Qualification is based on an examination and in this examination candidates must undergo the following five different types of evaluations. 1. Written tests 2. Oral examinations 3. Group discussions 4. Presentation 5. Personal interview. Two types of written tests are given to evaluate the knowledge level of the candidates, a short answer test and an essay. The oral examination is given to a group of 4 to 6 candidates. Two examiners are assigned to each group and 10 questions are asked of the candidates in turn. To the same group but with the different examiners assigned, more complicated problems are given in the discussion section. Each candidate is randomly given a subject for personal presentation from a pool of subjects. Three examiners are assigned to each candidate in the personal interview. Sixty percent is the criterion for success. For each of the evaluations other than the written tests, three evaluation categories, namely knowledge, expertise and personal attitude are introduced. Based on these checking points the examiners are requested to give a comprehensive evaluation of each candidate by points with one hundred as the perfect score. If the final evaluation in all three categories is successful, the candidate has passed the examination. Evaluation of this examination has been carried out concerning variation according to examiner, relationship between examination types and impression given by the candidates.

Key words: Specialist qualification, JSOH, Examination, Occupational physician, Occupational health

The Labor Standards Law implemented in 1947 has been effective as the basic legislative framework for occupational health services in Japan. Based on the article on occupational safety and health in the Law, the Occupational Safety and Health Law (OSH Law) was enacted in 1972.

Employers hiring more than 50 workers are required by the OSH Law to appoint an occupational physician. If the number of workers exceeds one thousand, the appointment must be full-time, and for more than three thousand workers two or more occupational physicians are mandatory. Based on a survey conducted in 1993 by the Ministry of Labor, the appointment rate of occupational physicians was 81.0% among enterprises with more than 50 workers.

Until 1996 there was no requirement for an occupational physician appointment except an ordinary medical license. An amendment to the Law was approved in 1996 and new legislation relevant to the appointment was put into effect in October 1998, requiring occupational physicians to finish a short course equivalent to the JMA program described below in advance of the appointment.

The Japan Medical Association (JMA) introduced a new systematic training and certification program in occupational health in 1990.

The JMA certification program is the very first step in the qualification of occupational health specialists in Japan and there has been no evaluation or examination for certification other than attending the 50-h lecture course. Therefore the level of expertise of these part-time occupational physicians in occupational health is low.

After the introduction of this new program, however, interest in this discipline gradually increased. More physicians than ever are now attending the JMA course to meet the requirements to become certified specialists. By the end of January 2001, 51,308 physicians had been certified under this program.

Even though there is no legal requirement for becoming
an occupational physician other than the JMA certificate level described above, for full-time positions in both large companies and occupational health service centers, a higher level of expertise is required. The Japan Society for Occupational Health established an advanced specialists certification scheme in 1992, requiring each candidate to receive a minimum of five years’ training under programs accredited by the Association before taking a final examination. This program is expected to meet the need for the competency level necessary for such full-time professionals.

Thus these two specialist certification programs for different levels have been established in Japan within the past ten years and they are expected to function as a systematic training scheme for occupational health physicians in the future. This paper introduces the JSOH qualification program and reports an analysis of the results of a recent examination.

The Qualification System of the JSOH Program

Certificates of qualification can be awarded only to those who have completed a defined training course and passed the examination of the Society. Prerequisites for taking this examination are 1) membership in the Society for five years or more, 2) minimum of two years clinical training after acquisition of the National License for medical practice, 3) completion of a systematic fundamental education in occupational health, 4) minimum of three years practical training in occupational health under the supervision of a certified senior occupational health physician, 5) at least one publication in the Society Journal or an oral presentation to the plenary meeting of the Society.

Required Level of Training

The level of systematic knowledge and practical training acquired by the candidates is evaluated in the examination according to the following criteria.

1. As an independent specialist, he/she must have the ability to conduct health care, work design, working environmental control and health education by him/herself or with the assistance of relevant specialists at the worksite.
2. He/she must be able to develop the most appropriate plan for a given subject in occupational health services, carry out it and evaluate the results.
3. He/she must have the ability to collect relevant information sufficient for the above activity or, if necessary, create a feasible design of research to collect such information. Based on the information obtained the physician must be able to propose an appropriate plan for improving worker’s health.

A check list has been developed so that each trainee can accomplish the program comprehensively by him/herself. The Training Record Book is issued by the Society to each registered trainee. The format of the Book is based on the list, and achievements in training can be recorded systematically. The trainee should have ability at the level of the above criteria in all the following items.

Section 1: Health care
1. Understanding the health care system.
2. Planning and execution of collective health check-ups.
3. Quality control of laboratory analyses.
4. Assessing working conditions and health status.
5. Personal health counseling on work-related complaints.
6. Planning health promotion taking age and gender into consideration.
7. Placement of workers at first employment or on returning to work after a long absence.
10. Appropriate understanding of the causal relationship between health and environment.
11. Understanding of the natural history of chronic diseases.
12. First aid and basic countermeasures for big accidents.

Section 2: Management of work environment and ergonomics
1. Understanding working conditions, manufacturing processes and work content, and assessing changes.
2. Assessment of work load.
3. Cooperating with management on assignment of workers.
4. Making up a list of hazards for a given work place.
5. Understanding the purpose and method of work environment measurements.
6. Linkage between health data and environmental data.
7. Selecting appropriate personal protectors and instructing workers on the correct use.
8. Understanding the mechanism and assessment of local ventilation systems.
9. Evaluation of the work support system.
10. Understanding the basic principles of work safety and cooperating with safety specialists.
11. Establishing an action plan for improving work environment and work design.
12. Decision making based on evaluation of priority among various programs for improving work environment and work management.

Section 3: Health education and general health management
1. Conducting health education for the individual.
2. Conducting health education for the group.
3. Knowledge and skill in OH ethics.
4. Understanding responsibility based on an understanding of the code and organization of the company.
5. Proposing an annual activity plan and the budget of the OH service for the company.
6. Allocation of health specialists and improvement of organizational activity.
7. Cooperating with the relevant sectors (personnel department or labor union) for better OH activities.
8. Making appropriate comments or suggestions in the OH group.
9. Recognizing the effects of documents issued by the occupational physician(s).
10. Preparation and execution of work site visits and evaluation.
11. Membership and chairing of OH meetings.
12. Retrieving necessary OH information from relevant journals, data bases or professional societies.
14. Understanding social concern regarding industrial activity and government policies.
15. Handling health records and compiling routine health statistics.
16. Creating feasible and effective designs for epidemiological investigations.

The Examination
The examination takes place once a year. Two consecutive days are assigned for the examination. The examination consists of five different types of evaluation. These and the time allocated to each are as follows.

1. Written tests—3 h
Two types of paper tests are employed to evaluate the level of knowledge of the candidates, in short answers and essays. Candidates are requested in the essay to choose 5 out of 10 questions and answer them. This test is to examine not only simple experience or relevant knowledge on a given subject but also candidate’s attitude towards matters which require ethical consideration. The choice of problems allows the candidate to respond to questions relevant to their own experience.

2. Oral examination—1.5 h
The oral examination is given to groups of 4 to 6 candidates. Two examiners are assigned to each group and 10 questions are given in turn. The questions concern skills and techniques that are difficult to examine by means of paper tests. The candidates are requested to cooperate with each other to make the answer comprehensive. The examiners observe and evaluate each candidate’s way of participating in such group work.

3. Group discussion—1.5 h
To the same group given the oral examination, but, with different examiners being assigned, complicated subjects are given for group discussion in this section of the examination. The subjects involve ethics, priority settings and strategy establishing. Selection of the chairperson and all other processes for discussion is left up to the group. The only requirement for the group is to reach a certain conclusion on the given subject within 30 min. The examiners are requested to passively observe these processes and evaluate attitude, team work and opinions of each candidate. Independent evaluation is made by each examiner.

4. Presentation—20 min for each candidate
At the beginning of the second day of the examination, each candidate is randomly given a subject for personal presentation from a pool of subjects. For preparation to the presentation 2.5 h are allotted during the period of the personal interview, which is three hours altogether. Thirty minutes is used for a candidate’s own interview time. Examples of the subjects for presentation are as follows.

- Educational materials for workers.
- Proposals to top executives.
- Proposals to the health and safety committee.
- Plans for establishing a new health care system.

Two examiners are assigned to each group for the presentation. Candidates must make their presentation to the group within 10 min, and 10 min of discussion follows. In the discussion individuals who make appropriate comments can earn points. This is done to compensate for any disadvantage incurred as the result of unhappy assignment of the subject for presentation.

5. Personal interview—30 min for each candidate
Three examiners interview one candidate. The average time given to each candidate is 30 min. Each candidate is requested to submit the Training Record Book in advance of this examination. The record should be checked and signed by the contracted supervisor before submission. The supervisor must visit the candidate’s work place to evaluate the self report by the candidate on the achievement of the training. One major purpose of the personal interview is to check the description in the record book, but final evaluation of knowledge, experience, skill and attitude to this specialty is the most important objective of this interview.

Method of Evaluation
The written tests are marked by points. In each of the other four types of evaluation a mark list is distributed to the examiner. It consists of three evaluation categories, namely knowledge, expertise and personal attitude. Based on these points examiners are requested to give a
comprehensive evaluation of each candidate by points, with one hundred as the perfect score. Each candidate receives nine independent scores, i.e. two for the oral exam, two for the group discussion, three for the personal interview and two for the personal presentation according to the number of examiners assigned to each session.

Results of the Past Six Examinations

By December 2000 eight examinations had been carried out and 106 out of 114 candidates passed. This very high success rate may be due mainly to self selection. Both written and oral questions used in all exams have been disclosed, so the candidates are well informed beforehand of the level and content of the exam. As a matter of fact, all the candidates except for three obtained over 60% in the written exams. Five out of eight who could not pass the exam failed for lack of experience or skills assessed by the presentation or the personal interview.

An Analysis of the Result

The sixth examination took place on the 29th and 30th of August 1998. Twenty candidates took this exam and all of them passed. The average score by candidate is shown in Fig. 1. The range of the personal scores was 65.6 to 85.8 and the total average was 76.9.

Figure 2 shows the distribution of scores by type of test for each individual. The range of personal scores is fairly wide and there are some patterns in individual score distribution. Case A in the figure is at a high average.
with a narrow range. B is distributed widely. C is at a low level with no high score.

The average score by type of test is shown in Fig. 3. The average for the written test was significantly lower but all others were distributed within a small range between 75 and 80.

To examine the relationship among types of tests correlation coefficients are shown in Table 1. The coefficient for the oral test and personal interview was .460. This value was the highest, but the p value was .059, which was marginally significant. The coefficient for the oral and written tests follows but was not significant. No other combinations showed any significant relationship.

Even though a correlation coefficient is low there may be a sub-group with a relationship in a different direction, and if this is the case it could lower the total coefficient. To check this, scattergrams for all ten combinations are examined, but no such specific sub-group was noted.

From the above results it was determined that each test evaluates different aspects of each candidate.

As mentioned above, at least two examiners are assigned for each test except the written test. The average for the difference in scores between two examiners is calculated for the four types of test. As shown in Table 2 the averages for the personal interview and presentation differ more than the others. The difference in the scores for group discussion was minimum.

Discussion

Nine years have passed since the JSOH qualification program was established. During that period the examination has been carried out eight times, and this program is becoming a well-accepted system for training and qualification in occupational health in the medical society of Japan, but the number of those who have qualified so far is far fewer than necessary, and

recognition of the specialty of occupational health by the general public is still poor.

According to a questionnaire survey on the validity of this program among those qualified by this program, the majority responded that almost all competencies to pass the examination are essential for professional occupational health physicians. The contents of the examination were also accepted by most of the respondents.

From the analysis of the recent examination described above the method of evaluation can be considered generally acceptable, but the biggest problem with this method is the number of examiners required. A minimum of two examiners must be allotted to each group of 4 to 7 candidates. This results in the need to have almost the same number of examiners as candidates.

The written tests were conducted independently, so that there was no chance for the oral examiners to have a preconceived idea of the results of the written examination when the other types of examinations were carried out. A fairly high correlation coefficient for the written test and oral examination or personal interview may indicate some duplication in the evaluation of the candidates. Some parts of the current program could be simplified.

The presentation measures each candidate’s creativity. All other examinations determine the response to stimulation given by the examiners. There are several aspects to be evaluated by the examination, and the relationship between the types of tests and these aspects are summarized in Table 3.

Substantial differences between examiners in the evaluation of scores were observed except in the discussion type examinations. This indicates a further need for advanced instruction or standardization of the evaluation criteria. This is, however, not easy, because

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*p=0.059

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difference between 2 examiners: n=20
there are so many aspects to standardize.

There has been a shortage of clinical specialists for more than 40 y in Japan. It has been difficult to recruit young physicians into the occupational health field. A policy establishing new medical schools began more than twenty years ago and the total number of medical schools in Japan doubled within 10 y after the beginning of the program. More candidates to become qualified occupational physicians are expected in the near future.

During this long lag period for occupational health in Japan, industry has improved in terms of work load so that the need for service has totally changed, but recognition of the field of occupational health by the medical society has not yet improved much under such inactive circumstances. Since the first examination under this qualification program, the questions used in the examinations have been published in the Society Journal. This is considered to be the most efficient way of changing the way Japanese physicians look upon occupational health.

In 1994 the government started an extensive program for establishing a regional service system of occupational health. The aim of this project is to bring OH service to smaller scale enterprises. As mentioned earlier, the current legal requirement for appointing OH physician is limited to establishments with more than 50 employees. This covers only 33% of the total working population.

Two projects for establishing occupational health-related centers are included. The first one is the Occupational Health Promotion Center (OHPC). An OHPC is allotted to each prefecture. The Regional Occupational Center (ROC) is a project entrusted by the Ministry of Labor to a local medical association. The total number of ROC is 347. The major role of the ROC is to provide occupational health services to small enterprises. The OHPC is expected to support such regional activities by members of the local medical associations. The OHPC has the necessary human resources, teaching materials, information resources and equipment to be used to support the ROC in providing practical services to smaller enterprises and training of physicians in the local community. It is hoped that competent professionals equivalent to those qualified by the JSOH program will be assigned to both the ROCs and OHPCs.

References